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THIRTEENTH SERIES: NO. 3—PART 2

# UNIVERSITY OF PENNSYLVANIA

## CATALOGUE

### SCHOOL OF MEDICINE

(1912-1913)

Announcements for the 148th Annual Session

**1913-1914**



Founded 1740

PHILADELPHIA  
PUBLISHED BY THE UNIVERSITY  
Bi-MONTHLY  
MARCH, 1913

*Entered at the Philadelphia, Pa., Post-Office as Second-Class Matter*

## **SPECIAL NOTICE.**

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Copies of the University Catalogue (containing detailed information concerning all the Schools) may be obtained ONLY upon application to the Secretary of the University, Room 114, College Hall.

To any alumnus of the University, the Catalogue will be sent upon application on receipt of name, class and address.

The special announcement of any of the following divisions of the University will be sent upon application to the appropriate Dean:

**THE COLLEGE**, including

**THE SCHOOL OF ARTS.**

**THE TOWNE SCIENTIFIC SCHOOL.**

**THE WHARTON SCHOOL OF FINANCE AND COMMERCE.**

**THE SUMMER SCHOOL.**

**THE COLLEGE COURSES FOR TEACHERS.**

**THE GRADUATE SCHOOL.**

**THE LAW SCHOOL.**

**THE SCHOOL OF MEDICINE.**

**THE SCHOOL OF DENTISTRY.**

**THE SCHOOL OF VETERINARY MEDICINE.**

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## CONTENTS.

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	PAGE
THE UNIVERSITY—	
General Information .....	5
Chronological Table .....	7
Administrative Officers .....	9
General Summaries .....	13
SCHOOL OF MEDICINE—	
Prefatory Note .....	15
PART I.—TEACHING STAFF .....	17
Faculty .....	18
PART II.—ADMISSION REQUIREMENTS .....	25
Announcement .....	26
Admission by Certificate .....	26
Admission by Examination .....	26
First Part—College Entrance Requirements .....	27
A Complete List of Subjects That May be Offered .....	27
Second Part—College Work .....	29
Two Year Special Course in Biology .....	29
Composite Year in Medicine .....	29
Special Scientific Requirements .....	30
Admission to Advanced Standing .....	31
PART III.—METHODS AND SUBJECTS OF INSTRUCTION .....	33
Undergraduate Instruction .....	34
Anatomy .....	36
Bacteriology and Hygiene .....	39
Chemistry and Toxicology .....	42
Physiological Chemistry .....	42
Physiology .....	43
Pathology .....	45
Pharmacology .....	48
Medicine .....	50
Pediatrics .....	56
Physical Therapy .....	57
Surgery .....	58
Orthopedic Surgery .....	63
Genito-Urinary Diseases .....	64
Gynecology .....	64
Dermatology .....	65
Ophthalmology .....	66
Obstetrics .....	67

## PART III.—METHODS AND SUBJECTS OF INSTRUCTION—Continued.

	PAGE
Neurology .....	69
Mental Diseases .....	71
Laryngology and Rhinology .....	71
Otology .....	72
Rosters .....	73
Text-books .....	80
<b>PART IV.—GRADUATE WORK</b> .....	<b>85</b>
Courses in Public Hygiene .....	86
Courses in Graduate School of the University .....	88
Courses in Tropical Medicine .....	91
Department of Research Medicine .....	94
Phipps Institute .....	94
Pepper Laboratory .....	94
<b>PART V.—EQUIPMENT AND FACILITIES</b> .....	<b>95</b>
Laboratories of Pathology, Physiology and Pharmacology..	96
Laboratories of Chemistry and Anatomy .....	97
Laboratory of Hygiene .....	97
New Clinical Laboratory .....	97
Wistar Institute of Anatomy and Biology .....	98
William Pepper Clinical Laboratory .....	99
The University Hospital .....	100
The Henry Phipps Institute .....	101
The University Library .....	103
Departmental Libraries .....	104
Library of the College of Physicians of Philadelphia .....	104
<b>PART VI.—GENERAL INFORMATION</b> .....	<b>105</b>
Arrangement of Session .....	106
Tuition Fees and Expenses .....	106
Fees for Special Courses .....	107
Rules in Relation to Fees .....	107
Examinations .....	108
Graduation .....	108
Scholarships .....	109
Prizes to be Awarded, June, 1913 .....	110
<b>APPOINTMENTS TO HOSPITALS</b> .....	<b>111</b>
<b>ALUMNI SOCIETIES—</b>	
Society of the Alumni of the School of Medicine .....	111
The Philadelphia Alumni Society of the School of Medicine..	112
<b>DEGREES AND PRIZES, 1912</b> .....	<b>113</b>
<b>STUDENTS, 1912-13</b> .....	<b>117</b>

## THE UNIVERSITY.

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### General Information.

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#### LOCATION.

The buildings of the University of Pennsylvania are situated in Philadelphia, on property covering an area of over fifty-nine acres. In addition to this land the University has recently acquired from the city an adjoining tract comprising fifty-five acres, more or less. The University may be reached from the various railroad stations as follows: From the West Philadelphia station of the Pennsylvania Railroad, on foot west on Woodland Avenue, a walk of less than ten minutes; from the Philadelphia and Reading Terminal station by the electric subway, west to Thirty-second Street, thence on foot west or Woodland Avenue; or from the Baltimore and Ohio Railroad Station by a walk of one square south to Walnut Street, thence by car over the bridge west to Thirty-fourth Street.

#### APPLICATIONS FOR CATALOGUES, ETC.

Applications for copies of the annual University Catalogue should be addressed to the Secretary of the University of Pennsylvania, Philadelphia, Pa.

The University also issues pamphlets relating to the College and the several Schools or to individual Departments and often containing information not found in the Catalogue. Inquirers interested in special branches of work only are advised to apply for these pamphlets, not for the Catalogue.

All letters of inquiry regarding the internal regulations and requirements in the College or each separate School of the University should be addressed to the Dean of that section (see *Administrative officers*, following), and *not* to the Secretary of the University.

## ACCOMMODATIONS FOR STUDENTS.

Lodging for students to the number of more than eight hundred is provided in the present dormitory system, which comprises an extended group of contiguous houses fronting upon three open courts. Plans of the dormitories, prices, and other details may be obtained upon application to the Bursar of the University, College Hall.

Board and lodging may be obtained also in the immediate vicinity of the University. Upon application at the offices of the Bursar, College Hall, lists of approved boarding houses may be seen.

## HOUSTON HALL.

Houston Hall is the home of the Houston Club, to membership in which any member of the University is eligible. The fee for active membership in the club is \$3.00 per annum.

Its purposes are to provide for the students a place where all may meet socially on common ground, and to furnish every available facility for healthy recreation and amusement in leisure hours. The equipment of the Hall includes a reading-room, with a large number of periodicals and newspapers; smoking-rooms, billiard and pool tables, tables for chess and checkers, a correspondence room, bowling alleys, shuffle boards, a bath-room, including shower and needle baths, and a swimming pool; athletic trophy rooms; a large auditorium with grand organ; rooms for the University papers and other organizations; a dark room for amateur photographers and many other rooms for general purposes.

The Christian Association, which has its headquarters in Houston Hall, is prepared to furnish prospective students, through its Secretary, full information with regard to the various undergraduate social activities, both secular and religious.

A Students' Employment Bureau is affiliated with the Christian Association: address Dana G. How, Director, Houston Hall.

# UNIVERSITY OF PENNSYLVANIA.

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## CHRONOLOGICAL TABLE.

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1740—"Charity School" founded.  
1749—The "Academy" established, with which the Charity School was combined.  
1753—Charter granted by Thomas and Richard Penn, incorporating "The Academy and Charitable School."  
1755—"Confirmatory Charter" granted by Thomas and Richard Penn, incorporating "The College, Academy and Charitable School."  
1765—School of Medicine founded.

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From September, 1777, to June, 1778, owing to the occupation of Philadelphia by British troops, recitations and lectures were suspended.

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1779—Withdrawal of the chartered rights and privileges of The College by the State Assembly, and incorporation of the "University of the State of Pennsylvania."  
1789—Restoration of its chartered rights and privileges to The College.  
1790—Law School founded (re-established in 1850).  
1791—Union of the University of the State of Pennsylvania with The College, under the title of the UNIVERSITY OF PENNSYLVANIA.  
1874—University Hospital established.  
1875—Towne Scientific School founded.  
1877—Department of Music established.  
1878—School of Dentistry founded.  
1881—Wharton School of Finance and Commerce founded.  
1882—Graduate School founded.  
1884—Veterinary School founded.

- 1885—Veterinary Hospital established.
- 1885—Department of Physical Education established.
- 1889—Department of Archaeology established.
- 1892—Laboratory of Hygiene established.
- 1892—Wistar Institute of Anatomy and Biology established.
- 1892—Saturday Courses for Teachers established.
- 1896—Houston Club organized.
- 1896—Flower Astronomical Observatory opened.
- 1904—Summer School (College) established.
- 1906—College Courses for Teachers established.
- 1910—Henry Phipps Institute transferred to the University.

## **ADMINISTRATIVE OFFICERS**

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### **OF THE CORPORATION.**

*Provost*—EDGAR F. SMITH, PH.D., Sc.D., L.H.D., LL.D.

Office in the John Harrison Laboratory of Chemistry, Thirty-fourth and Spruce Streets.

*Vice-Provost*—JOSIAH H. PENNIMAN, PH.D., LL.D.

Office, 104 College Hall.

*Secretary*—EDWARD ROBINS, A.M.

Office, 114 College Hall. Office hours, 9.30 A. M. to 4.30 P. M.  
Saturdays, 9.30 A. M. to 1 P. M.

*Treasurer*—WILLIAM H. HUTT, JR.

Office, 400 Chestnut Street.

*Recorder*—GEORGE E. NITZSCHE, LL.B.

Office, Houston Hall.

*Bursar*—WILLIAM O. MILLER, A.B.

Office, 102 College Hall. Office hours, 9 A. M. to 5 P. M., daily.  
The Bursar's office is open from 8.45 A. M. to 5 P. M. Saturdays,  
8.45 A. M. to 1 P. M.

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### **OF THE COLLEGE AND PROFESSIONAL FACULTIES.**

*Dean of the College Faculty*—ARTHUR H. QUINN, PH.D.

Office, 103 College Hall, Woodland Avenue. Office hours, 9 A. M. to 12 M., daily.

*Dean of the Towne Scientific School Faculty*—JOHN FRAZER, A.M., PH.D.

Office, Engineering Building. Office hours, 9 A. M. to 12 M., and 3 P. M. to 4 P. M., daily.

*Dean of the Wharton School Faculty*—ROSWELL C. McCREA, A.M., PH.D.

Office, Logan Hall, Thirty-sixth Street below Woodland Avenue.  
Office hours, 8.30 to 10.30 A. M.

*Dean of the Graduate School Faculty*—HERMAN V. AMES, A.M.,  
PH.D.

Office, 105 College Hall, Woodland Avenue. Office hours, 9 A. M.  
to 12 M., daily.

*Dean of the Law Faculty*—WM. DRAPER LEWIS, LL.B., PH.D.

Office in the Law School Building, Thirty-fourth and Chestnut  
Streets. Office hours, 11.15 A. M. to 12.15 P. M., daily, except  
on Tuesdays and Wednesdays, 12.15 to 1 P. M.

*Dean of the Medical Faculty*—WILLIAM PEPPER, A.B., M.D.

The Dean's Office (in the New Medical Laboratories, Hamilton  
Walk) is open from 9 A. M. to 5 P. M.; Saturdays, 9 A. M. to  
1 P. M.

*Dean of the Dental Faculty*—EDWARD C. KIRK, D.D.S., Sc.D.

Office, Dental Hall, Thirty-fourth and Locust Streets. Office  
hours, 9 A. M. to 1 P. M., daily.

*Dean of the Faculty of Veterinary Medicine*—LOUIS A. KLEIN,  
V.M.D.

Office, New Veterinary Building, Thirty-ninth Street and Wood-  
land Avenue. Office open daily from 9 A. M. to 5 P. M., except  
Saturday; on Saturday, 9 A. M. to 1 P. M.

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#### OF THE DEPARTMENT OF PHYSICAL EDUCATION.

*Director*—R. TAIT MCKENZIE, A.B., M.D.

Office in the Gymnasium, Thirty-third and Spruce Streets. Office  
hours, 3 P. M. to 6 P. M., daily, except Saturdays.

*Physicians*—RUFUS B. SCARLETT, M.D., 4009 Chestnut Street.

Office hours, until 11 A. M. on Monday, Wednesday, Friday;  
1 to 3 P. M. on Tuesday, Thursday, Saturday; 6 to 7.30 P. M.  
daily. Sunday and other hours by appointment. Telephone  
connection.

WILLIAM F. GUILFOYLE, M.D., 4014 Chestnut Street.

Office hours, until 10 A. M., and from 6 to 8 P. M. Afternoon  
hours by appointment. Telephone connection.

*Ophthalmologist*—WILLIAM C. POSEY, A.B., M.D., 2049 Chestnut  
Street.

Office hours, from 8.30 A. M. to 1 P. M., daily. Telephone con-  
nection.

## OF OTHER DEPARTMENTS.

*Librarian of the University*—MORRIS JASTROW, JR., PH.D.  
Office in the Library, Thirty-fourth Street below Walnut.

*Assistant Librarian*—KATHARINE S. LEIPER.

The Library is open daily during term-time, except Sundays and holidays, from 8.30 A. M. to 10 P. M. During the summer vacation, from 9 A. M. to 5 P. M.; during the session of the Summer School, from 8.30 A. M. to 5 P. M.

*Librarian of the Biddle Law Library*—MRS. MARGARET C. KLINGELSMITH, LL.B.

Office in the Law School Building, Thirty-fourth and Chestnut Streets. Office hours, 10 A. M. to 5 P. M., daily.

*Director of the Summer School*—J. P. W. CRAWFORD, PH.D.

*Superintendent of the University Hospital*—MARION E. SMITH.

The Hospital is on Spruce Street above Thirty-fourth. Communications concerning the Hospital and the admission of patients should be addressed to the Superintendent.

*Director of the William Pepper Clinical Laboratory*—HERBERT FOX, M.D.

Office in the Laboratory. Office hours, 2 P. M. to 3 P. M., daily.

The Laboratory is on Spruce Street below Thirty-sixth, adjoining the Hospital.

*Director of the Wistar Institute*—MILTON J. GREENMAN, PH.B., M.D., Sc.D.

Office in the Institute, Thirty-sixth Street and Woodland Avenue. Office hours, from 12 M. to 1 P. M., daily, except Saturdays.

*Director of the John Harrison Laboratory of Chemistry*—EDGAR F. SMITH, PH.D., Sc.D., L.H.D., LL.D.

Office in the Laboratory, Thirty-fourth and Spruce Streets.

*Director of the Laboratory of Hygiene*—ALEXANDER C. ABBOTT, M.D., DR. P.H., Sc.D.

Office in the Laboratory, Thirty-fourth Street below Walnut.

*First Assistant in the Laboratory of Hygiene*—DAVID HENDRICKS BERGEY, A.M., M.D.

Office in the Laboratory. Office hours, 9 A. M. to 12 M., and 2 P. M. to 5 P. M., daily.

*Director of the Randal Morgan Laboratory of Physics*—ARTHUR W. GOODSPED, PH.D.

Office in the Laboratory, Thirty-fourth Street below Walnut.

*Director of the Psychological Laboratory and Clinic*—LIGHTNER WITMER, PH.D.

Office in the Laboratory, College Hall.

*Director of the Light and Heat Station*—SAMUEL B. LOCKE.

Office in the Central Light and Heat Station, Thirty-fourth and Spruce Streets.

*Director of the Zoölogical Laboratory*—CLARENCE E. McCLUNG, PH.G., A.M., PH.D.

The Laboratory is on Hamilton Walk.

*Director of the Robert Hare Chemical Laboratory*—JOHN MARSHALL, M.D., NAT. Sc.D., LL.D.

*Director of the Botanic Garden*—JOHN M. MACFARLANE, D.Sc.

The Garden is adjacent to the Botanical Laboratory, on Hamilton Walk, and is open daily from 7 A. M. to sunset. The greenhouses are open from 8 A. M. to 5 P. M.

*Director of the Flower Astronomical Observatory*—ERIC DOOLITTLE, C.E.

The Observatory is situated at Cedar Lane Station, three-fourths of a mile beyond the Sixty-ninth Street Terminal Station of the Market Street elevated electric road.

*Purchasing Agent*—BOULTON EARNSHAW.

Office, College Hall. Office hours, 9 A. M. to 4.30 P. M.

#### HENRY PHIPPS INSTITUTE.

*Executive Director*—CHARLES J. HATFIELD, M.D.

*Director of the Laboratory*—PAUL A. LEWIS, M.D.

*Director of the Clinical Department*—H. R. M. LANDIS, M.D.

#### UNIVERSITY MUSEUM.

The Museum contains the archaeological and ethnological collections of the University, and is situated on Spruce Street below Thirty-fourth, opposite Franklin Field. The collections are open to visitors daily from 10 A. M. to 5 P. M.; on Sundays, from 2 P. M. to 6 P. M. *Director*, GEORGE B. GORDON, Sc.D.

## GENERAL SUMMARIES.

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### OFFICERS OF INSTRUCTION.

The College .....	146
Towne Scientific School .....	157
Wharton School .....	47
Graduate School .....	114
Law School .....	32
School of Medicine .....	173
"    " Dentistry .....	63
"    " Veterinary Medicine .....	27
Emeritus Professors .....	9
	768
Duplications .....	215
Total .....	553

### STUDENTS.

The College .....	1,699
Towne Scientific School .....	908
Wharton School .....	637
Graduate School .....	417
Law School .....	383
School of Medicine .....	320
"    " Dentistry .....	511
"    " Veterinary Medicine .....	115
Evening School .....	535
	5,525
Duplications .....	202
Total .....	5,323

### GEOGRAPHICAL SUMMARY OF STUDENTS.

Alabama .....	15	Bahamas .....	1	Canada .....	1
Alaska .....	1	Brazil .....	18	Central America .....	11
Argentina .....	8	British Guiana .....	1	Chile .....	1
Australia .....	17	British West Indies .....	1	China .....	16
Austria .....	1	California .....	20	Colombia .....	4

Colorado .....	9	Kentucky .....	10	Peru .....	3
Connecticut .....	69	Louisiana .....	3	Philippine Islands..	2
Costa Rica .....	2	Maine .....	14	Poland .....	1
Cuba .....	10	Maryland .....	62	Porto Rico .....	16
Delaware .....	68	Massachusetts .....	62	Portugal .....	1
Denmark .....	1	Mexico .....	14	Rhode Island.....	8
Dist. of Columbia..	38	Michigan .....	11	Roumania .....	2
Ecuador .....	5	Minnesota .....	24	Russia .....	1
Egypt .....	6	Mississippi .....	5	Scotland .....	6
England .....	7	Missouri .....	16	South Africa .....	2
Florida .....	9	Montana .....	8	South Carolina ...	9
France .....	7	Nebraska .....	12	South Dakota .....	3
Georgia .....	13	Newfoundland ....	1	Spain .....	2
Germany .....	6	New Hampshire ...	8	Tennessee .....	11
Greece .....	1	New Jersey .....	485	Texas .....	10
Hawaii .....	2	New Mexico .....	2	Turkey .....	1
Holland .....	5	New York .....	351	Utah .....	7
Honduras .....	1	New Zealand .....	3	Vermont .....	5
Idaho .....	9	North Carolina ...	30	Virginia .....	21
Illinois .....	28	North Dakota ....	5	Washington .....	25
India .....	1	Ohio .....	75	West Virginia .....	17
Indiana .....	39	Oregon .....	4	Wisconsin .....	14
Iowa .....	20	Panama .....	4	Wyoming .....	1
Italy .....	7	Pennsylvania, out- side of Phila...	1,386	Total .....	5,525
Jamaica .....	6	Philadelphia .....	2,259	Duplications ....	202
Japan .....	5	Persia .....	1	Total .....	5,323
Kansas .....	12				

## SCHOOL OF MEDICINE.\*

On September 26, 1913, the 148th annual session of the School of Medicine will be opened, to continue until June 17, 1914, when the annual commencement exercises for the term will be held.

This venerable institution, the oldest Medical School in the United States, was founded in 1765 by Dr. JOHN MORGAN, who filled in it the first medical professorship created in America. In his opening "Discourse upon the Institution of Medical Schools in America," delivered in the College of Philadelphia, May 30, 1765, Dr. MORGAN uttered these prophetic words: "Perhaps this medical institution, the first of its kind in America, though small in its beginning, may receive a constant increase of strength, and annually exert new vigor. It may collect a number of young persons, of more than ordinary abilities, and so improve their knowledge as to spread its reputation to distant parts. By sending these abroad duly qualified, or by exciting an emulation amongst men of parts and literature, it may give birth to other useful institutions of a similar nature, or occasional rise, by its example, to numerous societies of different kinds, calculated to spread the light of knowledge through the whole American continent, wherever inhabited."

Through Dr. MORGAN, the pupil of HUNTER in London and of CULLEN in Edinburgh, the graduates of this school take a just pride in regarding it as the lineal descendant of the best medical schools of Great Britain in the 18th century. To Dr. MORGAN was soon joined another pupil of CULLEN, Dr. WILLIAM SHIPPEN, as Professor of Anatomy and Surgery, thus forming another tie of relationship to the celebrated University of Edinburgh, methods of instruction in which were substantially adopted here. In the next year Dr. ADAM KUHN was added as Professor of Botany and Materia Medica; and on June 21, 1768, a Commencement was held, at which medical honors were bestowed, the first in point of time in America. In 1769, Dr. BENJAMIN RUSH was elected to the Professorship of Chemistry, while Dr. THOMAS BOND, one of the trustees of the College of Philadelphia, delivered lectures on Clinical Medicine in the Pennsylvania Hospital.

To the faculty thus composed of MORGAN, SHIPPEN, KUHN and RUSH have succeeded, at various times, professors whose reputations

\*The authorities of the school reserve the right to make such modifications in connection with the announcements embodied in this catalogue as may from time to time be required or deemed wise without the formality of further notice.

have been national, as WOODHOUSE, BARTON, WISTAR, CHAPMAN, PHYSICK, DEWEES, HORNER, HARE, GEORGE B. WOOD, HODGE, FRANCIS GURNEY SMITH, HENRY H. SMITH, LEIDY, AGNEW, GOODELL, PEPPER, STILLÉ, R. A. F. PENROSE, H. C. WOOD, ASHHURST, NORRIS, TYSON and DUHRING.

The number of graduates in the School of Medicine is 13,721.

## **PART I.**

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### **TEACHING STAFF.**

## SCHOOL OF MEDICINE.

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### FACULTY.

EDGAR F. SMITH, PH.D., Sc.D., L.H.D., LL.D., PROVOST.  
JOSIAH H. PENNIMAN, PH.D., LL.D., VICE-PROVOST.

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HORATIO C. WOOD, M.D., LL.D., Emeritus Professor of Materia Medica, Pharmacy and General Therapeutics.

JAMES TYSON, M.D., LL.D., Emeritus Professor of Medicine.

LOUIS A. DUHRING, M.D., LL.D., Emeritus Professor of Dermatology.

JAMES WILLIAM WHITE, M.D., LL.D., JOHN RHEA BARTON  
Emeritus Professor of Surgery.

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### PROFESSORS.

EDWARD T. REICHERT, M.D., Professor of Physiology.

BARTON COOKE HIRST, A.B., M.D., Professor of Obstetrics.

GEORGE A. PIERSOL, M.D., Sc.D., Professor of Anatomy.

JOHN MARSHALL, M.D., NAT. Sc.D., LL.D., Professor of Chemistry and Toxicology.

ALEXANDER C. ABBOTT, DR.P.H., M.D., Sc.D., PEPPER Professor of Hygiene and Bacteriology.

JOHN G. CLARK, M.D., Professor of Gynecology.

GEORGE E. DE SCHWEINITZ, A.M., M.D., Professor of Ophthalmology.

CHARLES H. FRAZIER, A.B., M.D., Professor of Clinical Surgery.

CHARLES K. MILLS, M.D., Professor of Neurology.

WILLIAM G. SPILLER, M.D., Professor Neuropathology.

CHARLES W. BURR, B.S., M.D., Professor of Mental Diseases.

R. TAIT MCKENZIE, A.B., M.D., Professor of Physical Education and of Physical Therapy.

RICHARD MILLS PEARCE, M.D., Professor of Research Medicine.

ALONZO ENGELBERT TAYLOR, M.D., BENJAMIN RUSH Professor of Physiological Chemistry.

ALFRED N. RICHARDS, A.M., PH.D., Professor of Pharmacology.

ALLEN J. SMITH, A.M., M.D., Sc.D., LL.D., Professor of Pathology and of Comparative Pathology; in charge of the courses in Tropical Medicine.

EDWARD MARTIN, A.M., M.D., JOHN RHEA BARTON Professor of Surgery.

GWILYM G. DAVIS, M.D., M.R.C.S. (Eng.), LL.D., Professor of Orthopedic Surgery.

JOHN B. DEAVER, M.D., LL.D., Professor of Practice of Surgery.

ALFRED STENGEL, M.D., Sc.D., Professor of Medicine.

MILTON B. HARTZELL, A.M., M.D., LL.D., Professor of Dermatology.

HENRY K. PANCOAST, M.D., Professor of Roentgenology.

M. HOWARD FUSSELL, M.D., Professor of Applied Therapeutics.

B. ALEXANDER RANDALL, M.A., M.D., PH.D., Professor of Otology.

J. P. CROZER GRIFFITH, PH.D., M.D., Professor of Pediatrics.

THOMAS R. NEILSON, M.D., Professor of Genito-Urinary Diseases.

CHARLES P. GRAYSON, M.D., Professor of Laryngology and Rhinology.

DAVID RIESMAN, M.D., Professor of Clinical Medicine.

JOSEPH SAILER, M.D., Professor Clinical Medicine.

ON THE GEORGE B. WOOD FOUNDATION.

DANIEL J. McCARTHY, A.B., M.D., Professor of Medical Jurisprudence.

— — — Professor of Botany.

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ASSOCIATE PROFESSORS.

WILLIAM G. SPILLER, M.D., Associate Professor of Neurology.

JAMES K. YOUNG, M.D., Associate Professor of Orthopedic Surgery.

T. TURNER THOMAS, M.D., Associate Professor of Applied Anatomy.

## ADJUNCT PROFESSORS.

RICHARD H. HARTE, M.D., Adjunct Professor of Surgery.

JAMES P. HUTCHINSON, M.D., Adjunct Professor of Surgery.

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## ASSISTANT PROFESSORS.

ALFRED C. WOOD, M.D., Assistant Professor of Surgery.

RICHARD C. NORRIS, A.M., M.D., Assistant Professor of Obstetrics.

DAVID H. BERGEY, A.M., M.D., Assistant Professor of Bacteriology.

WILLIAM PEPPER, A.B., M.D., Assistant Professor of Clinical Pathology and Dean of the Faculty.

J. EDWIN SWEET, A.M., M.D., Assistant Professor of Surgical Research.

PAUL A. LEWIS, M.D., Assistant Professor of Pathology.

GEORGE W. NORRIS, A.B., M.D., Assistant Professor of Medicine.

EDWARD LODHOLZ, M.D., Assistant Professor of Physiology.

GEORGE FETTEROLF, M.D., Assistant Professor of Anatomy.

WILLIAM H. F. ADDISON, A.B., M.B., Assistant Professor of Histology and Embryology.

LEON A. RYAN, PH.B., PH.D., Assistant Professor of Chemistry and Toxicology.

H. R. M. LANDIS, M.D., Assistant Professor of Medicine.

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DAMASO RIVAS, M.S., M.D., PH.D., Assistant Director of Laboratory of Comparative Pathology and Tropical Medicine.

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## ASSOCIATES.

HENRY D. BEYEA, M.D., Associate in Gynecology.

THOMPSON S. WESTCOTT, A.B., M.D., Associate in Pediatrics.

HERMAN B. ALLYN, A.B., M.D., Associate in Medicine.

NATHANIEL GILDERSLEEVE, M.D., Associate in Bacteriology.

JOHN H. GIRVIN, M.D., Associate in Obstetrics.

WILLIAM R. NICHOLSON, PH.B., M.D., Associate in Obstetrics.

JAMES W. McCONNELL, M.D., Associate in Neurology.

BROOKE M. ANSPACH, M.D., Associate in Gynecology.

JOHN B. CARNETT, M.D., Associate in Surgery.

GEORGE P. MÜLLER, M.D., Associate in Surgery.  
JOHN H. JOPSON, M.D., Associate in Surgery.  
T. TURNER THOMAS, M.D., Associate in Surgery.  
JOHN C. HIRST, M.D., Associate in Obstetrics.  
MAURICE OSTHEIMER, A.B., M.D., Associate in Pediatrics.  
ALFRED R. ALLEN, M.D., Associate in Neurology and Neuro-pathology.  
J. HAROLD AUSTIN, B.S., M.D., Associate in Research Medicine.  
A. P. FRANCINE, A.M., M.D., Associate in Medicine.  
B. F. STAHL, Ph.G., B.S., M.D., Associate in Medicine.  
S. D. LUDLUM, B.S., M.D., Associate in Neurology and Neuro-pathology.  
E. H. GOODMAN, M.D., Associate in Medicine.  
G. M. PIERSOL, B.S., M.D., Associate in Medicine.  
O. H. PERRY PEPPER, M.D., Associate in Medicine, and in Research Medicine.

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## LECTURERS.

ARTHUR A. STEVENS, A.M., M.D., Lecturer on Medicine.  
B. FRANKLIN STAHL, Ph.G., B.S., M.D., Lecturer on Dietetics of the Sick.  
JOHN T. CARPENTER, M.D., Lecturer on Ophthalmology.  
FRANCIS R. PACKARD, M.D., Lecturer on the History of Medicine.

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## INSTRUCTORS.

CHARLES C. NORRIS, M.D., Instructor in Gynecology.  
EDWARD A. SHUMWAY, B.S., M.D., Instructor in Ophthalmology.  
E. HOLLINGSWORTH SITER, M.D., Instructor in Genito-Urinary Diseases.  
WALTER S. CORNELL, B.S., M.D., Instructor in Osteology.  
THOMAS B. HOLLOWAY, M.S., M.D., Instructor in Ophthalmology.  
H. MAXWELL LANGDON, M.D., Instructor in Ophthalmology.  
J. CLAXTON GITTINGS, M.D., Instructor in Pediatrics.  
WALTER G. ELMER, B.S., M.D., Instructor in Orthopedic Surgery.  
HOWARD C. CARPENTER, M.D., Instructor in Pediatrics.  
CLIFFORD B. FARR, A.B., M.D., Instructor in Medicine.

JOHN SPEESE, M.D., Instructor in Surgery, and in Surgical Pathology.

CHARLES A. FIFE, A.B., M.D., Instructor in Pediatrics.

THOMAS A. COPE, M.D., Instructor in Medicine.

FRED H. KLAER, A.B., M.D., Instructor in Medicine.

WILLIAM B. SMALL, A.M., M.D., Instructor in Gynecology.

B. A. THOMAS, A.M., M.D., Instructor in Surgery.

FLOYD E. KEENE, M.D., Instructor in Gynecology.

RALPH BUTLER, M.D., Instructor in Otology.

CARL WILLIAMS, B.S., M.D., Instructor in Ophthalmology.

WALTER S. HARGETT, A.B., M.D., Instructor in Laryngology.

ROBERT G. TORREY, M.D., Instructor in Medicine.

FRANK C. KNOWLES, M.D., Instructor in Dermatology.

WILSON G. WOOD, B.S., M.D., Instructor in Pharmacology.

FRANK A. CRAIG, M.D., Instructor in Medicine.

JOHN M. CRUICE, A.B., M.D., Instructor in Medicine.

C. M. MONTGOMERY, A.B., M.D., Instructor in Medicine.

J. T. ULLOM, A.B., M.D., Instructor in Medicine.

GEORGE G. ROSS, M.D., Instructor in Surgery.

ALBERT D. WHITING, M.D., Instructor in Surgery.

DAMON B. PFEIFFER, MD., Instructor in Surgery.

A. I. RINGER, M.D., Instructor in Physiological Chemistry.

O. H. PLANT, M.D., Instructor in Pharmacology.

A. P. C. ASHHURST, A.B., M.D., Instructor in Surgery.

R. A. KEILTY, M.D., Instructor in Pathological Histology.

J. A. KOLMER, M.D., Instructor in Experimental Pathology.

K. M. LYNCH, M.D., Instructor in Gross Morbid Anatomy.

WILLIAM JACKSON MERRILL, A.B., M.D., Instructor in Orthopedic Surgery.

FRANK D. DICKSON, M.D., Instructor in Orthopedic Surgery.

SAMUEL LEOPOLD, M.D., Instructor in Neurology and Neuropathology.

N. S. YAWGER, M.D., Instructor in Neurology.

WILLIAMS B. CADWALADER, M.D., Instructor in Neurology and in Neuropathology.

EDWARD M. WILLIAMS, M.D., Instructor in Neurology and in Neuropathology.

W. C. ROSE, B.S., PH.D., Instructor in Physiological Chemistry.

GEORGE H. CHAMBERS, M.D., Instructor in Histology.

J. REX HOBENSACK, M.D., Instructor in Anatomy.

HOWARD A. SUTTON, M.D., Instructor in Osteology.

WILLIAM E. QUICKSALL, M.D., Instructor in Anatomy.  
PENN-GASKELL SKILLERN, M.D., Instructor in Anatomy.  
NATHANIEL GINSBURG, M.D., Instructor in Anatomy.  
EDWIN C. TOWN, M.D., Instructor in Normal Histology.

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## ASSISTANT INSTRUCTORS.

JOHN W. BUSCH, M.D., Assistant Instructor in Surgery.  
ALEXANDER A. UHLE, A.B., M.D., Assistant Instructor in Genito-Urinary Diseases.  
J. H. ALLEN, A.B., M.D., Assistant Instructor in Obstetrics.  
L. F. LUBURG, M.D., Assistant Instructor in Obstetrics.  
ELDRIDGE L. ELIASON, A.B., M.D., Assistant Instructor in Surgery.  
CHARLES F. MITCHELL, M.D., Assistant Instructor in Surgery.  
BENJAMIN D. PARISH, B.S., M.D., Assistant Instructor in Otology.  
THOMAS C. KELLY, A.M., M.D., Assistant Instructor in Medicine.  
GEORGE M. LAWS, B.S., M.D., Assistant Instructor in Surgery.  
FRED. DEFOREST WEIDMAN, M.D., Assistant Instructor in Pathology.  
D. N. HUSIK, M.D., Assistant Instructor in Laryngology.  
KARL SCHÄFFLE, M.D., Assistant Instructor in Surgery.  
W. H. MACKINNEY, M.D., Assistant Instructor in Genito-Urinary Diseases.  
JOHN L. LAIRD, B.S., M.D., Assistant Instructor in Genito-Urinary Diseases.  
J. A. BABBITT, A.M., M.D., Assistant Instructor in Otology.  
A. H. HOPKINS, B.S., M.D., Assistant Instructor in Medicine.  
E. P. BARNARD, M.D., Assistant Instructor in Obstetrics.  
N. L. KNIPE, PH.B., M.D., Assistant Instructor in Obstetrics.  
A. A. HOWELL, A.B., M.D., Assistant Instructor in Medicine.  
E. B. KRUMBHAAR, A.B., M.D., Assistant Instructor in Medicine.  
HOWARD L. MARSH, B.S., M.S., Assistant Instructor in Chemistry.  
DE FOREST P. WILLARD, M.D., Assistant Instructor in Orthopedic Surgery and Surgery.  
ROBERT N. IVY, D.D.S., M.D., Assistant Instructor in Surgery.  
HENRY WINSOR, M.D., Assistant Instructor in Surgery.  
ISAAC H. JONES, M.D., Assistant Instructor in Otology.  
LEWIS FISHER, M.D., Assistant Instructor in Otology.  
E. C. BENDER, M.D., Assistant Instructor in Laryngology.

THOMAS A. O'HARA, M.D., Assistant Instructor in Orthopedic Surgery.

J. LEON HERMAN, M.D., Assistant Instructor in Genito-Urinary Diseases.

WILLIAM F. GUILFOYLE, M.D., Assistant Instructor in Surgery.

ALEXANDER RANDALL, M.D., Assistant Instructor in Surgery.

GEORGE W. OUTERBRIDGE, M.D., Assistant Instructor in Surgical Pathology.

ARTHUR H. GERHARD, M.D., Assistant Instructor in Medicine.

W. ESTELL LEE, M.D., Assistant Instructor in Medicine.

C. D. DANIELS, M.D., Assistant Instructor in Obstetrics.

L. H. LANDON, M.D., Assistant Instructor in Surgery.

PENN-GASKELL SKILLERN, M.D., Assistant Instructor in Surgery.

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#### PROSECTORIS.

ISAAC WELSH BROWN, M.D., Prosector to the Chair of Anatomy.

HENRY WINSOR, M.D., Prosector to the Associate Professor of Applied Anatomy.

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#### ASSISTANTS.

CHARLES C. NORRIS, M.D., Assistant in Gynecological Pathology.

RALPH BUTLER, M.D., Assistant in Otological Pathology.

REUBEN A. BOGLIA, M.D., Assistant in Physiology.

J. GARRETT HICKEY, D.D.S., M.D., Assistant in Physiology.

HARRY A. SCHATZ, A.B., M.D., Second Assistant in Bacteriology.

SYLVESTER J. DEEHAN, M.D., Third Assistant in Bacteriology.

FREDERICK O. WAAGE, A.B., M.D., Assistant in Physiology.

JAMES GARRETT McCOLLIN, P.D., M.D., Assistant in Physiology.

S. BYRON GOLDSMITH, B.S., M.D., Assistant in Anatomy.

F. C. KNOWLES, M.D., Assistant in Dermatological Pathology.

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ELIZABETH BARLETT, *Secretary.*

## **PART II.**

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### **ADMISSION REQUIREMENTS.**

## ADMISSION REQUIREMENTS.

The requirements for admission to the School of Medicine consist of two parts.

**FIRST:** The usual college entrance requirements of  $14\frac{1}{2}$  units, as explained in detail below.

A Carnegie unit represents a year's work in any subject in a secondary school constituting approximately one-half of a full year's work. This is on the assumption that the length of the school year is from 36 to 40 weeks, that a period is from 40 to 60 minutes in length, and that the study is pursued for not less than 4 periods a week. The total length of time for accomplishing a Carnegie unit cannot be less than 120 sixty-minute hours, or their equivalent.

**SECOND:** Two years of college work or its equivalent in case of students presenting credentials from a foreign country aggregating not less than 30 units including courses in Physics, Chemistry and General Biology or Zoölogy, with appropriate laboratory work. (See detailed explanation below.)

A unit of college work is the equivalent of 1 hour of lecture or recitation each week for the full academic year, or of 2 hours of laboratory work each week for the same period.

**ADMISSION BY CERTIFICATE:** Certificates from recognized colleges, covering these requirements will be accepted in lieu of examinations. All the certificates should be transmitted to the Dean of the Medical Faculty as early as possible in June for decision in early summer. Should this, for good reason, be impossible, then not later than September 1. These credentials are examined by an Admission Committee composed of members of the Faculty of the College of this University. Candidates should appreciate the importance of sending in their certificates at as early a date as possible, because until these have been acted upon and the decision announced, they will not know in what subjects they will be required to take examinations. Certificates must be accompanied by official statements of the exact amount of Physics, Chemistry and Zoölogy or General Biology studied, and the laboratory note books of the candidates in these subjects.

(Blanks for these purposes may be obtained upon application to the Dean.)

**ADMISSION BY EXAMINATION:** Candidates who are unable to meet these requirements in whole, or in part, by certificate, may apply for examinations in the subjects in which they are deficient. Such applications should be made to the Dean of the College of this University.

Upon successfully passing the examinations set by the College, in the subjects in which the candidates are deficient, they will be admitted to regular standing in the School of Medicine. Examinations for admission to the first year class in 1913 will be held in College Hall, beginning on Thursday, June 19, 1913, at 9 A. M., and Thursday, September 18, 1913, at 9 A. M. Candidates may elect between these two days. Applicants for such examinations will be required to register in College Hall between 9 and 11 A. M., either on Thursday, June 19, 1913, or on Thursday, September 18, 1913.

### FIRST PART. COLLEGE ENTRANCE REQUIREMENTS.

A. Each candidate must offer the following:

	Units.
English 1—Grammar and Composition.....	$1\frac{1}{2}$
"    2—General and Specific Reading (A and B).....	$1\frac{1}{2}$
(The English A and B of the C. E. E. B., will be accepted as meeting the requirements in English.)	
History .....	I
(Any Histories amounting to 1 unit, chosen from the list below.)	
Mathematics A1—Algebra, to Quadratics .....	I
"    A2—Algebra, Quadratics and beyond.....	$\frac{1}{2}$
"    C—Plane Geometry .....	I
Two Foreign Languages.....	4
(Not less than 2 units in any one language.)	
(Any language from the following list will be satisfactory, provided that one of them is either French or German.) Total..	$10\frac{1}{2}$
B. In addition to the particular subjects above, each candidate must offer from the following list.....	4

### A COMPLETE LIST OF SUBJECTS THAT MAY BE OFFERED.

English 1—Grammar and Composition.....	$1\frac{1}{2}$
"    2—General and Specific Reading (A and B).....	$1\frac{1}{2}$
"    Advanced .....	I
Greek B—Xenophon, Anabasis, Bks. I-IV.....	I
"    C—Homer, Iliad, Bks. I-IV.....	I
"    F—Prose Composition .....	$\frac{1}{2}$
"    G*—Sight Translation of Prose.....	$\frac{1}{2}$
"    Advanced .....	I

\* No assigned value unless offered with B.

Units.

Latin A*—Grammar and Elementary Prose Composition.....	1
"    B—Cæsar and Elementary Sight Translation of Prose, i	
"    C—Cicero and Advanced Sight Translation of Prose.. i	
"    D—Vergil and Sight Translation of Poetry .....	i
"    L†—Advanced Prose Composition .....	
"    Advanced .....	i
German A—Elementary German .....	2
"    B—Intermediate German .....	i
"    Advanced .....	i
French A—Elementary French .....	2
"    B—Intermediate French .....	i
"    Advanced .....	i
Spanish A—Elementary Spanish .....	2
"    B—Intermediate Spanish .....	i
Italian A—Elementary Italian .....	2
"    B—Intermediate Italian .....	i
Mathematics A1—Algebra, to Quadratics .....	i
"    A2—Algebra, Quadratics and beyond .....	½
"    B—Higher Algebra .....	½
"    C—Plane Geometry .....	i
"    D—Solid Geometry .....	½
"    E—Rudiments of Plane Trigonometry.....	0
"    F—Plane Trigonometry .....	½
"    G—Spherical Trigonometry .....	½
History A—Ancient .....	½ to i
"    B—Medieval and Modern .....	½ to i
"    C—English .....	½ to i
"    D*—American History and Civil Government.....	½ to i
"    Advanced .....	½ to i
*Civil Government .....	½ to i
Economics .....	½ to i
Physics A—Elementary Physics without Laboratory Work...	½
"    B—Elementary Physics with Laboratory Work.....	i
Chemistry .....	i
Botany .....	½ to i
Zoölogy .....	½ to i
Biology .....	i

\* History D and Civil Government, may at most, count as 1½ points.

† No assigned value; must be offered with C.

\* No assigned value unless offered with B or C.

	Units.
Physiology .....	$\frac{1}{2}$ to 1
Physical Geography or Physiography .....	$\frac{1}{2}$ to 1
Astronomy .....	$\frac{1}{2}$ to 1
Geology .....	$\frac{1}{2}$ to 1

### SECOND PART. COLLEGE WORK.

A. The following subjects must be offered and they must include laboratory work. The candidate's laboratory note books must be presented, certified by the teacher in the usual way.

	Units.
Chemistry—including both General Chemistry and Qualitative Analysis .....	6
Physics .....	4
Zoölogy or General Biology.....	3

(For full description of these three science requirements see below.)

B. At least 17 units, made up of subjects which are open to Freshmen and Sophomores in colleges or universities of recognized standing.

For description of appropriate branches representing this portion of the candidate's preparation, reference may be made to the College Fasciculus of the Annual Catalogue of the University.

The various studies are not here detailed; since considerable latitude of election exists in many colleges and more or less variation in prescribed courses also occurs in different college curricula. Such differences occasioned by election or by regular requirements of institutions will be adjudged by comparison with the work of the Freshman and Sophomore classes of the College of the University of Pennsylvania.

### TWO-YEAR SPECIAL COURSE IN BIOLOGY.

These two years of college work are covered by the Two-year Special Course in Biology of the University of Pennsylvania designed for students who are unwilling to complete a regular course leading to a degree, and especially for those who intend later to take up the study of Medicine. A certificate of proficiency is granted to those who complete the course satisfactorily.

### COMPOSITE YEAR IN MEDICINE.

A student in the course in Arts and Science may, in his Senior year, register also as a regular student in the First-year Class in the School

of Medicine. Students wishing to avail themselves of this privilege are required to do only fifty-five (55) units of purely college work, including three (3) units in Physical Education, the other nine (9) units required for graduation being credited to them from the studies of the First-year Class in Medicine, including one (1) unit in Physical Education.

Some other colleges and universities besides the University of Pennsylvania allow their students at the completion of their Junior year, to matriculate in the Medical School of the University of Pennsylvania, and grant them their degree in Arts or Science at the end of their first year in Medicine.

#### REPRESENTING SPECIAL SCIENTIFIC REQUIREMENTS FOR MEDICAL STUDIES.

**Laboratory note-books, properly certified, must be submitted with diploma or certificate.**

##### CHEMISTRY.

Credits for six units in General and Analytical Chemistry are prerequisites to the School of Medicine. These requirements are in general covered by the regular Freshman courses in chemistry in colleges recognized by this University. They are covered by courses 1 and 3 of the Department of Chemistry of this University. Credits in chemistry (whether by diploma, certificate or on examination) presented by candidates must be equivalent to said courses 1 and 3 of the Department of Chemistry of this University. Although Organic Chemistry is not required, it is strongly urged that the candidate for admission have done work in this branch of chemistry.

##### PHYSICS.

Credits for four units of collegiate Physics are prerequisite for admission to the School of Medicine. These requirements are in general covered by the regular lecture and laboratory courses in Physics in colleges recognized by this University. Courses 1 and 2 of the Department of Physics of this University fulfill the requirements. Plane Trigonometry (Mathematics 2) is a prerequisite.

##### GENERAL BIOLOGY OR GENERAL ZOOLOGY

Credits for three units of collegiate Biology or Zoölogy are prerequisite for admission to the School of Medicine. Credits in these subjects must be equivalent to Course I of the Department of

Zoölogy or to half of Course 1 of the Department of Zoölogy together with half of Course 1 of the Department of Botany of this University. Botany alone does not meet the requirements.

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## ADMISSION TO ADVANCED STANDING.

Candidates for admission to advanced standing will be required to meet the admission requirements which were in effect at the time the class to which they are entitled to enter was admitted, in addition to the examination in the subjects italicized below.

Examinations for admission to advanced standing for the session 1913-14 may be taken in the new Medical Laboratories, beginning Monday, June 2, 1913, at 9 A. M., or Monday, September 22, 1913, at 2 P. M. All examinations must be passed before the beginning of the regular session, September 26, 1913, at 8 P. M.\*

Candidates who have attended one course in a recognized regular medical school in which the required annual session is not less than eight months in length, are admitted to the SECOND-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Anatomy* and in *Bacteriology*.

Candidates who have attended two courses in a recognized regular medical school in which the required annual session is not less than eighth months in length, are admitted to the THIRD-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Toxicology*, *Pathology*, *Physical Diagnosis*, *Bacteriology*, the entire subjects of *Anatomy* and *Physiology*, *Applied Anatomy* and *Pharmacology*.

Candidates who have attended three courses in a recognized regular medical school in which the required annual session is not less than eight months in length, are admitted to the FOURTH-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Pharmacology*, *Bacteriology*, *Physical Diagnosis*, *Anatomy*, *Physiology*, *Applied Anatomy*, *Pathology*, *Therapeutics*, *Medicine*, *Surgery*, *Obstetrics* and *Ophthalmology*.

Graduates of recognized regular medical schools, in which the required annual session is not less than eight months in length, and in

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\* Students from other colleges who have not had practical work in the subjects here taught in laboratory courses equivalent to that done in this institution will be required to make up such deficiency by taking special courses in such branches.

which four years' attendance upon instruction is required to obtain the degree in Medicine, are admitted to the FOURTH-YEAR Class with the understanding that they pass examinations in *Obstetrics, Therapeutics, Pathology* and *Gross Pathology*, either at the beginning or at the end of the fourth year, in addition to the regular examinations of that year.

## **PART III.**

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**METHODS AND SUBJECTS OF INSTRUCTION.**

**UNDERGRADUATE.**

## UNDERGRADUATE INSTRUCTION.

The course of instruction extends over a period of four years, with one session in each year, beginning on the last Friday of September and ending on the third Wednesday in June.

The course may be said to be divided into two periods of two years each: the first period devoted to the fundamental medical sciences, Physiological Chemistry, Toxicology, Anatomy, Physiology, Bacteriology, Pharmacology and Pathology, including also Physical Education; the second period to the clinical subjects, Medicine, Surgery, Obstetrics and the specialties.

### FIRST PERIOD.

The subjects of the first two years have been arranged according to a modification of the concentration system. By this system the student is enabled to concentrate his energy upon one or two subjects, and must master these before he is allowed to continue the course. Thus the first year is devoted chiefly to anatomy, including embryology, normal histology and osteology, and to physiological chemistry, and bacteriology.

The subjects of the second year follow in logical sequence those of the year preceding. The time of the second year is thus given over largely to physiology, pathology, pharmacology and applied anatomy. In addition to these the work of the second year includes courses in physical diagnosis, toxicology and bandaging.

Instruction upon the subjects of the first two years is almost entirely practical, so that the greater part of the student's time is spent in the laboratories. In the Laboratories of Anatomy, in those of Pathology, Physiology and Pharmacology, which were opened in June, 1904, and in the bacteriological section of the Laboratory of Hygiene, the students are afforded unsurpassed facilities for practical work in these fundamental subjects.

### SECOND PERIOD.

With the beginning of the third year the student enters upon the second period, which covers the third and fourth years, and is devoted almost exclusively to instruction in the so-called clinical subjects—Medicine, Surgery, Obstetrics and the specialties. There is no sharp dividing line between the work of the third and fourth years, so that the courses in the clinical subjects may be said to cover a period of two years.

From a glance at the tabular representation of the hours of instruction for the third and fourth years (later pages), it will be seen that arrangements have been made to keep the student fully occupied throughout each day. No especial opportunities are offered him to engage in special lines of work before he graduates. In point of fact, any desire to specialize before graduation is rather discouraged. It has always been the object and aim of this institution to prepare its students for the practice of general medicine, not to graduate them as "specialists." *Its policy has been to offer the student a well-graded, well-proportioned and comprehensive course*, so that upon his graduation he stands prepared to *practice* medicine. Should he decide to take up a specialty or to engage in teaching or investigation after graduation, he will be the better prepared by his broad education, and still better prepared if he has had several years of clinical experience.

The methods of instruction are varied, but mostly practical. The latter include ward visits, ward classes, clinical conferences and practical observation in the wards and out-patient department of the University Hospital. Systematic lectures, general clinics and recitations have been found indispensable, but play a less conspicuous part in the course.

The facilities for instruction are abundant. It is possible to offer to each student opportunities to come into personal contact under proper supervision with a large and varied series of cases. The University Hospital, with its capacity of 391 beds, is operated exclusively for the benefit of the School of Medicine. Adjoining the University campus is the Philadelphia General Hospital, with a capacity of 1600 beds, where the wards are open to both teachers and students throughout the year; this not including the adjoining Philadelphia Insane Hospital, with over 2000 beds, also available for teaching purposes. Material advantage is had, too, by the students of the Fourth-year Class in attendance in sections upon the work of the Phipps Institute for the Study, Prevention and Cure of Tuberculosis, recently acquired by the University through the generosity of Mr. Henry Phipps.

In addition, extramural teaching is conducted in the Children's, the German and Pennsylvania Hospitals by members of the teaching staff. A voluntary course upon the contagious diseases, conducted at the Municipal Hospital, is offered to the members of the Graduating Class.

**ANATOMY.**

GEORGE A. PIERSOL, M.D. .... *Professor of Anatomy.*  
T. TURNER THOMAS, M.D. .... *Associate Professor of Applied Anatomy.*  
GEORGE FETTEROLF, M.D. .... *Assistant Professor of Anatomy.*  
WILLIAM H. F. ADDISON, M.D. .... *Assistant Professor of Histology and Embryology.*  
WALTER S. CORNELL, M.D. .... *Instructor in Osteology.*  
J. REX HOBENSACK, M.D. ....  
WM. E. QUICKSALL, M.D. ....  
PENN-GASKELL SKILLERN, M.D. .... *Instructors in Anatomy.*  
NATHANIEL GINSBURG, M.D. ....  
GEORGE H. CHAMBERS, M.D. .... } *Instructors in Histology.*  
EDWIN C. TOWN, M.D. ....  
HOWARD A. SUTTON, M.D. .... *Instructor in Osteology.*  
ISAAC WELSH BROWN, M.D. .... *Prosector to Professor of Anatomy*  
HENRY WINSOR, M.D. .... *Prosector to Associate Professor of Applied Anatomy.*  
S. BRYON GOLDSMITH, M.D. .... } *Volunteer Assistants in Anatomy.*  
J. LEON HERMAN, M.D. ....  
ERWIN F. FABER. .... *Instructor in Drawing.*

Of the following courses in Anatomy, I to IX, inclusive, are required of candidates for the degree of Doctor of Medicine. All are completed during the first year, except Courses III and IX, which are completed during the second year. Courses X to XIV are not required, but may be taken by students who have had satisfactory preparatory training.

I. SYSTEMATIC ANATOMY OF THE ORGANS. *Professor Piersol.*—October to January inclusive; three hours weekly.

II. ANATOMY OF THE CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. *Professor Piersol.*—February to May inclusive; three hours weekly.

III. COURSE IN APPLIED ANATOMY. *Associate Professor Thomas.*—February to May inclusive; three hours weekly.

IV. LABORATORY COURSE IN GENERAL HISTOLOGY. *Dr. Addison and assistants.*—October to December inclusive; each section two mornings weekly.

V. LABORATORY COURSE IN THE HISTOLOGY OF ORGANS. *Dr. Addison and assistants.*—January to March inclusive; each section two mornings weekly.

VI. LABORATORY COURSE IN EMBRYOLOGY. *Dr. Addison and assistants.*—April to May inclusive; each section two mornings weekly.

VII. OSTEOLOGY. *Dr. Cornell.*—October to January inclusive; one hour weekly.

VIII. LABORATORY COURSE IN OSTEOLOGY. *Drs. Cornell and Sutton.*—October to November inclusive; each section ten hours for seven weeks.

IX. PRACTICAL STUDY OF THE BODY BY DISSECTION. *Dr. Fetterolf and assistants.*—October to May inclusive; each section two hours daily for periods of seven weeks.

X. SPECIAL COURSE ON ANATOMY OF SENSE ORGANS. *Professor Piersol.*—February 1 to May 15; Wednesday mornings.

XI. SPECIAL COURSE IN ANATOMY OF FRACTURES AND LUXATIONS.

XII. ADVANCED LABORATORY COURSE IN VERTEBRATE EMBRYOLOGY. *Professor Piersol and Dr. Addison.*—October 15 to May 1; mornings.

XIII. LABORATORY COURSE IN MICROSCOPICAL TECHNIQUE. *Professor Piersol and Dr. Addison.*—April 1 to May 15; three mornings weekly.

XIV. ADVANCED WORK AND ORIGINAL INVESTIGATION. *Professor Piersol.*—October to May.

Courses I and II, three lectures a week throughout the session, present the principles, as well as details, of human anatomy, including structure and development. Especial pains are taken to impress the broader morphological significance of the details of human anatomy. These courses are exceptionally well illustrated by means of charts, lantern, models, museum preparations and fresh dissections, the unusual resources of the Wistar Institute of Anatomy and Biology being additionally available, not only for class instruction, but also for individual study.

Courses IV and V occupy two mornings each week, until April 1, during which time the student is required to mount, study and draw preparations of all of the important tissues and organs of the human body, as well as to learn the methods employed in their preparation.

Course VI is devoted to the mounting and study of series of chick and mammalian embryos. The laboratory is equipped with excellent microscopes of recent model, and supplied with the most approved apparatus for histological and embryological work.

Course VIII, in the osteological laboratory, is conducted for a period of forty-two days, two hours daily. The exercises include the detailed study of the skeleton, each student being provided with bones which he is required to draw, noting the important features and principal muscular attachments. The joints are also studied on finished dissections. Bones are lent to students upon conditions similar to those governing the issue of books from a library.

Course IX forms a most important part of the first and second year work, every student being required to carefully dissect and pass practical examination upon the cadaver. The class works at least two hours daily under the close supervision of the Instructor in Anatomy and his assistants. Excellent and abundant dissecting material is assured by the improved methods of preservation and the facilities for cold storage. Opportunity for additional work is afforded to students who desire to devote more time to practical anatomy.

Course III is a continuation of the study of anatomy, but from the standpoint of its application, and not as an abstract science. The course embraces surface anatomy, the outlines of the organs, the position of the joints, significance of bony points, muscular swells, the position and means of recognizing the various nerves and arteries; the influence of the muscles in fractures; the construction of joints in reference to luxations; a knowledge of the parts incised in amputations; how the parts influence and direct the progress of abscesses; a knowledge of the lymphatics in reference to pyogenic and carcinomatous infections; a knowledge of the position and relation of the abdominal organs necessary for diagnostic and operative purposes; also those of the chest; cerebral localization, paralysis, etc., and innumerable other facts. Attention is given to the relation of the various tissues and organs to each other, so that the operations on those parts may be understood. It is the object of the course to present to the student the subject of anatomy in such manner as to enable him to utilize it in forming diagnoses and applying methods of treatment.

Instruction is given by demonstrations. These embrace the living and dead body and anatomical preparations. Special dissections and preparations are made to illustrate and explain fractures, dislo-

cations, amputations, ligation of arteries, the position and relation of organs by frozen sections, etc., and also by injections of wax, the affections of the joints, palmar and other abscesses, etc.

A final examination, both written and practical, is held at the completion of the term.

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## BACTERIOLOGY AND HYGIENE.

ALEXANDER C. ABBOTT, M.D., Sc.D., Dr.P.H., PEPPER *Professor of Hygiene and Bacteriology.*

DAVID H. BERGEY, A.M., M.D.....*Assistant Professor of Bacteriology.*

NATHANIEL GILDERSLEEVE, M.D.....*Associate in Bacteriology.*

HARRY A. SCHATZ, M.D.....*Second Assistant in Bacteriology.*

SYLVESTER J. DEEHAN, M.D.....*Third Assistant in Bacteriology.*

IRA AYER, M.D., Dr.P.H.....THOMAS A. SCOTT *Fellow in Hygiene.*

HENRY FIELD SMYTH, M.D., Dr.P.H., GEORGE B. WOOD *Fellow in Hygiene.*

### BACTERIOLOGY.

I. LECTURES. *Professor Abbott.*—A course of lectures preliminary to the practical work of the first-year students is given, one lecture weekly, during the first term. This course comprehends those elementary phases of the subject with which the student should be familiar at the time he begins his practical work.

II. LABORATORY COURSE. *Professor Abbott, Assistant Professor Bergey, Drs. Gildersleeve, Schatz and Deehan.*—The course of lectures is followed by the laboratory exercises. These begin about February 1 and continue until the end of the session.

The number of hours given to the practical work in this branch is about one hundred and ninety to each student of the First-year Class. During this time students receive instruction in the use of the microscope in bacteriological work; the methods of cultivating bacteria and of isolating them in pure cultures; the steps necessary to the identification of particular species of bacteria; the relation of bacteria to infection; the methods of immunization and vaccination; the methods of sterilization and disinfection; the testing of disinfectants; the bacteriological study of air, water and soil, etc. Such

students as demonstrate ability to advance beyond the class work are given the opportunity to do so; and are encouraged to pursue such studies providing the latter do not interfere with hours assigned to other subjects.

The course in detail covers the following subjects:

1. Apparatus employed—sterilizers, incubators, pressure regulators, thermostats, etc.
2. Culture media, methods of preparation, sterilization methods.
3. Characteristics of cultures of bacteria in general and of special forms.
4. Methods of obtaining, from mixtures of different bacteria, individual species in pure cultures.
5. Microscopic technique. Use and care of instruments, staining from cultures, section cutting, and staining and mounting of tissues.
6. Pathogenic bacteria isolation, identification and inoculation.
7. Disinfection, thermal and chemical, methods and apparatus, modes of testing efficiency.
8. Bacteriological investigation of water.
9. Bacteriological investigation of air.
10. Bacteriological investigation of soil.

#### HYGIENE.

III. LECTURES. *Professor Abbott.*—The teaching in Hygiene consists of a course of systematic lectures to the Fourth-year Medical students, and, if time be available, of practical exercises in the laboratory. The didactic course is compulsory for all students receiving the degree of Doctor of Medicine, while the practical course is voluntary.

The lectures are given twice weekly throughout the first term. They cover the following topics of general sanitary importance:

A consideration of the factors concerned in the direct causation of disease, and the manifold conditions of life that indirectly favor the occurrence of disease among individuals, groups of individuals and communities.

A brief sketch of the important transmissible and epidemic diseases embracing a discussion of their modes of transmission, portals of infection, geographical and seasonal distribution and the approved methods of their prevention.

A consideration of prophylaxis in general, embracing disinfection and disinfectants, protective vaccination and the anti-toxic state, the disposal of the dead after infectious diseases, and quarantine.

The atmosphere, from the chemical, physical, and biological standpoints; the air of enclosed spaces; the problems of ventilation and heating; the various pollutions of the atmosphere, such, for instance, as those from the soil, from industries, from sewers, etc., and their influence on health and disease.

Water—its sanitary significance; the characteristics of waters from various sources and their suitability to domestic needs; the pollutions to which waters from different sources are liable; the biological significance of these pollutions; interpretations of the results of analyses; natural and artificial purification of waters; the relation of water to health and disease.

Sewage—the part taken by the soil and its constituents in the disposal of organic waste; the characteristics of sewage from different sources; the various methods for the disposal of sewage; the influence of sewage disposal upon the health of communities.

IV. PRACTICAL COURSE. *Professor Abbott and Assistant Professor Bergey.*—The following subjects, arranged especially for the needs of those students intending to enter upon the practical pursuit of sanitary work, are taken up:

1. The atmosphere, climate and meteorological observations and records, chemical analysis, bacteriological investigation, methods of investigation, methods of ventilation and heating.
2. Water—physical, chemical and bacteriological investigation of water-supplies; methods of obtaining samples; qualitative and quantitative analysis for impurities; collection, storage and purification of water intended for domestic use; effects of filters, aeration, etc.
3. Sewage disposal, sewers, house drainage and the air of sewers.
4. Disposal of refuse, cremation of garbage, etc.
5. Soils and building sites, physical, chemical and bacteriological investigation, soil and moisture, ground air.
6. Foods—adulteration, milk and meat inspections.
7. Clothing—microscopic examination, poisonous dyes.
8. Management of contagious diseases. Practical tests of different methods of disinfection, chemical and thermal; notification, isolation and quarantine.
9. Vital statistics, registration and methods of tabulation.
10. Offensive and dangerous trades.

V. COURSE IN PUBLIC HYGIENE. (See pages 86 to 88.)

VI. ORIGINAL INVESTIGATION. In addition to the foregoing set courses, facilities are offered by the Laboratory for special work.

Students and graduates of this school or elsewhere will find opportunities for advanced work in any of the subjects properly coming within the scope of the Laboratory. Arrangements for such work can be made by correspondence with the Director of the Laboratory.

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### **CHEMISTRY AND TOXICOLOGY.**

JOHN MARSHALL, M.D..... *Professor of Chemistry and Toxicology.*  
LEON A. RYAN, PH.D..... *Assistant Professor of Chemistry.*  
HOWARD L. MARSH, M.S..... *Assistant Instructor in Chemistry.*

The course in toxicology is given in the second term of the second year of the medical course. One lecture and one period of laboratory instruction are given each week. Especial attention is devoted to the medico-legal aspects of the subject.

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### **PHYSIOLOGICAL CHEMISTRY.**

ALONZO ENGLEBERT TAYLOR, M.D..... BENJAMIN RUSH *Professor of Physiological Chemistry.*  
A. I. RINGER, M.D..... *Instructor in Physiological Chemistry.*  
W. C. ROSE, PH.D..... *Instructor in Physiological Chemistry.*

Instruction in Physiological Chemistry is given during the first year of the medical course. The schedule includes three hours of lectures, two hours of recitation and twelve hours of laboratory work per week for one-half of the academic year. Since all students enter the department with one year of collegiate chemistry and physics, the work of the course in physiological chemistry is confined to organic and strictly physiological chemistry. Following a brief survey of the field of organic chemistry, the course of instruction comprises a systematic survey of the whole field of physiological chemistry, particular attention being devoted to metabolism. The viewpoint of the course is physiology, interpreted from the modern concepts of physics and chemistry. Especial attention is paid to the instruction in analysis, in order that the future physician may be properly equipped to judge and to use approved physical and chemical methods in the investigation of morbid physiology.

The research laboratories of the department are open to workers qualified to undertake original investigations in physiological chemistry.

Graduate Work: Qualified students may elect physiological chemistry, in accordance with the regulations of the Graduate Council.

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## PHYSIOLOGY.

EDWARD T. REICHERT, M.D.....*Professor of Physiology.*

EDWARD LODHOLZ, M.D.....*Assistant Professor of Physiology.*

REUBEN A. BOGLA, M.D.....

J. GARRETT HICKEY, M.D., D.D.S....

FREDERICK O. WAAGE, M.D.....

JAMES GARRETT McCOLLIN, M.D....

} *Assistants in Physiology.*

The instruction in Physiology embraces systematic courses of lectures, practical work by the student, demonstrations and conferences given during and extending throughout the second year. The students, therefore, before entering upon their work in this department, have been trained in Physiological Chemistry, Anatomy and Normal Histology.

I. LECTURES. *Professor Reichert.*—Four lectures a week on the general subject of Nutrition, from October 1 to February 1.

II. LECTURES. *Professor Reichert.*—Four lectures a week on the Heat Mechanism and the Nervous and Muscular Systems, from February 1 to May 29.

The lectures are copiously illustrated by tables, charts, diagrams and drawings, this being supplemented and considerably extended by the courses of instruction in the demonstration room and laboratory.

III. STUDENTS' LABORATORY WORK, IN ILLUSTRATION AND EXTENSION OF COURSE I. *Professor Reichert, Dr. Lodholz and assistants.*

IV. STUDENTS' LABORATORY WORK, BEARING A SIMILAR RELATION TO COURSE II. *Professor Reichert, Dr. Lodholz and assistants.*

The course of practical work has been carefully and systematically planned, chiefly upon the *inductive* method of instruction, and seven hours a week are assigned to each student for this work, together with demonstrations and conferences. The main objects sought in

the laboratory are: the illustration of the lectures by the most impressive methods; the supplementation of collateral work to further impress important fundamental facts and broaden their application; the training in the use of instruments of precision, with especial reference to the use of apparatus in clinical and experimental medicine; the cultivation of the individual's power of observation and deduction; the encouragement of accuracy of expression and method, of collateral work, and the co-ordination of facts.

The instruction in the practical work is given under the direction of the Professor of Physiology by the Instructor and his assistants. Each student is assigned a table and the necessary apparatus, and works under the direct supervision of the teaching staff. He is directed in technique and in what to observe, but he is self-dependent as to his results and conclusions, which he must present for examination in the form of "graphic records" and written records at the end of each exercise.

V and VI. DEMONSTRATIONS. *Dr. Lodholz and assistants.*—Two corresponding series of demonstrations, which take the place of practical work when the latter is of a character too difficult or otherwise undesirable for the student to pursue; as, for instance, work involving the use of complicated or very expensive apparatus, the employment of mammals, etc. These demonstrations are given in their proper relation to other instruction in physiology.

VII. CONFERENCES. *Dr. Lodholz and assistants.*—Conferences, which cover the subject-matter of the lectures, are held at appropriate times.

VIII. JOURNAL CLUB. Recent work in Physiology is reported by the members of the department, and by those actively engaged in research and advanced work in the laboratories.

IX. SEMINAR. Problems under investigation in the department are introduced for the mutual advantages of discussion. Conducted by Professor Reichert and the staff of the department.

X. GRADUATE COURSES. *Professor Reichert.*—These courses are arranged to suit the requirements of those presenting themselves for the work. Rooms and apparatus are placed at the disposal of such students, and every facility is offered for the prosecution of research.

XI. ELECTIVE COURSES IN ADVANCED PHYSIOLOGY. *Professor Reichert.*—These are offered to students of the third and fourth

years in Medicine. The intention is to give to those who may desire it an opportunity to continue the laboratory work of the previous year in ways that are impossible with large classes, and as a foundation for the prosecution of research.

**XII. RESEARCH.** The laboratory offers all the advantages of its facilities and equipment for the investigation of problems in Physiology. This may be arranged for at any time by communicating with Professor Reichert.

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## PATHOLOGY.

ALLEN J. SMITH, M.D. .... *Professor of Pathology.*  
 ROBERT A. KEILTY, M.D. .... *Instructor in Pathological Histology.*  
 KENNETH M. LYNCH, M.D. .... *Instructor in Gross Morbid Anatomy.*  
 JOHN A. KOLMER, M.D. .... *Instructor in Experimental Pathology.*  
 F. D. WEIDMAN, M.D. .... *Assistant Instructor in Pathology.*  
 ERWIN P. FABER. .... *Instructor in Drawing.*

### SURGICAL PATHOLOGY.

JOHN SPEESE, M.D. .... *Instructor in Surgery.*  
 KARL SCHÄFFLE, M.D. .... *Assistant Instructor in Surgery.*  
 GEORGE W. OUTERBRIDGE, M.D. .... *Assistant Instructor in Surgical Pathology.*

### NEUROPATHOLOGY.

WILLIAM G. SPILLER, M.D. .... *Professor of Neuropathology.*  
 ALFRED R. ALLEN, M.D. .... }  
 S. D. LUDLUM, M.D. .... } *Associates in Neuropathology.*  
 SAMUEL LEOPOLD, M.D. .... }  
 WILLIAMS B. CADWALADER, M.D. .... } *Instructors in Neuropathology.*  
 EDWARD M. WILLIAMS, M.D.... }

### GYNECOLOGICAL PATHOLOGY.

JOHN G. CLARK, M.D. .... *Professor in Gynecology.*  
 CHARLES C. NORRIS, M.D. .... *Assistant in Gynecological Pathology.*

### OPHTHALMIC PATHOLOGY.

GEORGE E. DE SCHWEINITZ, M.D. .... *Professor of Ophthalmology.*  
 ..... .... *Assistant in Ophthalmic Pathology.*

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**OTOLOGICAL PATHOLOGY.**

B. ALEXANDER RANDALL, M.D....*Professor of Otology.*

RALPH BUTLER, M.D.....*Assistant in Otological Pathology.*

**DERMATOLOGICAL PATHOLOGY.**

M. B. HARTZELL, M.D.....*Professor of Dermatology.*

F. C. KNOWLES, M.D.....*Assistant in Dermatological Pathology.*

Instruction in Pathology extends over the second and third years of the medical curriculum. The plan of instruction embraces a general course in pathology under the direct supervision of the chair of Pathology, and a group of courses of applied special pathology, limited to the third or fourth year, in charge of the staff of instructors of the clinical branches concerned. In this latter group, which looks eventually toward the presentation of all special applications advantageously taught by laboratory methods, there have thus far been organized laboratories of Surgical Pathology, Neuropathology, Gynecological Pathology, Ophthalmologic Pathology, Otological Pathology and Dermatological Pathology. In each division of the subject except the last four named, the plan of teaching includes systematic lectures, demonstrations and practical class exercises.

The general instruction in pathology includes the following courses:

I. GENERAL PATHOLOGY. *Professor Smith and assistants.*—This subject is given to the Second-year Class. Three lectures each week for the first half of the term are devoted to the various retrograde and progressive elementary pathological processes, to regeneration, inflammation, the specific inflammations, tumor formation and to teratology. In the laboratory of pathological histology, each student devotes three periods of two and one-half hours each week to the study of illustrative tissues by the microscope, the gross features of the processes discussed being correlated by frequent demonstration of material in the laboratory or in lectures. The projection microscope is employed as an additional means of demonstration of the histological preparations, the essential features of each lesion being pointed out upon the screen to the student at the beginning of the study period.

II. SPECIAL PATHOLOGY. *Professor Smith and assistants.*—Instruction in the special pathology of the various organs, with particular reference to the pathological physiology of each and the development of symptoms of disease, is taken up systematically in lectures in the

second half of the second year; and in the laboratory of pathological histology the minute changes of the more important diseases of each organ are studied in as close relation as possible with the lecture instruction. At the same time brief demonstrations of the gross appearances of the diseased organs are made; and whenever profitable experimental work is introduced for the elucidation of special problems.

In the third year the lectures on special pathology are continued two hours each week—the entire lecture work of this division covering one and one-half years. A brief course, largely demonstrative and individual, upon the principles of immunity and serum diagnosis is included in this course.

III. During the third year each student, for two hours each week, studies the accumulated autopsy material and especially selected and museum preparations, systematically and by the "case" method. After a preliminary demonstration of the method of performing autopsies, the class is divided into small sections, and as autopsies are being performed in the University Hospital and Philadelphia General Hospital, the students are required to attend, and participate in the work. In the fourth year the students of the various ward classes in the University Hospital attend the autopsies upon those subjects with whose clinical course each class has been familiar in the wards; special instruction, attempting to correlate the pathological findings with the known symptoms of the case in life, being given. Opportunity for the completion of such investigations by histological and bacteriological methods is afforded the student in the laboratories of the department.

IV. ADVANCED WORK.—With the increased space and added facilities afforded by the McManes Laboratory of Pathology the department offers to advanced and post-graduate students special courses in experimental pathology, immunology and serum diagnosis, animal parasitology, pathological histology, museum and autopsy work; and opportunity is afforded those suitably trained to undertake special investigations.

In addition to the above, the following work is presented by the various clinical groups in the special departments of the McManes Laboratory of Pathology (the courses VIII, IX and X, however, not given the undergraduate classes):

V. SURGICAL PATHOLOGY.—(See also *Surgery*, page 59.)

*Dr. Speese*.—Demonstrations of charts, gross specimens and microscopic specimens, to each member of the class, one and one-half

hours a week. This course is supplemental to Dr. Müller's lectures, and aims to present specimens illustrative of the principal surgical diseases. The following subjects are among those demonstrated: repair of wounds, suppuration, abscess, gangrene, ulcer, fistula, sinus; diseases of the thyroid, salivary and mammary glands; repair after fracture, diseases of bones, joints, ligaments, bursæ; diseases of the digestive tract, including the lip, tongue, stomach, gall bladder, liver, pancreas, intestine, appendix and rectum; diseases of the kidney, ureter, bladder, prostate, penis, scrotum and testicle; tumors about the jaw, connective tissue tumors, epithelial skin tumors; diseases of the lymphatic system.

VI. NEUROPATHOLOGY. *Dr. Spiller*.—(See *Neurology*, page 70.)

VII. GYNECOLOGICAL PATHOLOGY. *Dr. Chas. C. Norris*.

VIII. OPHTHALMIC PATHOLOGY. ——————.

IX. OTOLOGICAL PATHOLOGY. *Dr. Ralph Butler*.

X. DERMATOLOGICAL PATHOLOGY. *Dr. F. C. Knowles*.

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## PHARMACOLOGY.

ALFRED N. RICHARDS, PH.D. .... *Professor of Pharmacology*.

WILSON G. WOOD, M.D. .... *Instructor in Pharmacology*.

OSCAR H. PLANT, M.D. .... *Instructor in Pharmacology*.

Instruction in pharmacology is given during the second and third years and is required of all candidates for the degree of Doctor of Medicine.

SECOND YEAR. LECTURES. *Professor Richards*. Two hours weekly throughout the year.

In the lectures the physiological action of the important drugs is systematically considered, emphasis being laid upon those features in action which are of importance in relation to therapeutic use or toxicological effects.

CONFERENCES. *Drs. Wood and Plant*.

Two sections, one hour weekly throughout the year.

The conferences are devoted to informal discussion of the subjects studied in lectures and text book.

LABORATORY WORK IN MATERIA MEDICA AND PHARMACY. *Professor Richards, Drs. Wood and Plant*. Two sections, five hours weekly, November 25 to January 25.

The laboratory work of the first half year includes the practical study of the general physical and chemical properties of the active constituents of drugs; practice in pharmaceutical methods of manufacture, at least one sample of each type of pharmacopeial preparations being made by each student; the study of incompatibilities and of prescription compounding. Together with this work in the laboratory the subject of prescription writing is taken up, the student being required to write each week a number of prescriptions including substances and preparations already studied in the laboratory. A portion of each laboratory period is devoted to criticism of these prescriptions with demonstrations.

**LABORATORY WORK IN PHARMACOLOGY.** *Professor Richards, Drs. Wood and Plant.* Two sections. Two and one-half hours weekly, February 1 to June 1.

The laboratory work of the second half year is devoted to the practical study of drug action. Each section of the class is subdivided into groups of two, three or four students as occasion demands, and each of these smaller groups, under adequate supervision, performs experiments which demonstrate the action exerted by drugs upon the important physiological mechanisms—nervous system, respiration, circulation, kidney, gastro-intestinal tract, etc. Important experiments which cannot be successfully performed by students are shown in demonstration.

**THIRD YEAR. PRACTICAL THERAPEUTICS.** *Dr. Wood.* Two sections. One and one-half hours weekly, December 3 to June 1.

In this course pharmacology is studied in relation to definite problems in the treatment of disease. In it, the more important features in a variety of conditions of disease are outlined and histories of cases previously studied by the instructor in charge are given out. The student is required to plan drug treatment based, in so far as is possible, upon the known action of the drugs which might be chosen and the nature of the conditions to be treated, and to write the prescriptions and instructions covering it. These outlines and prescriptions are critically discussed in the light of the results of the treatment which was actually applied in the cases studied. In arrangement, this course follows as closely as possible the subjects taken up in the course on Applied Therapeutics (Department of Medicine).

**RESEARCH.** The research laboratories of the department are open to a limited number of qualified workers.

## MEDICINE.

ALFRED STENGEL, M.D., Sc.D.....	<i>Professor of Medicine.</i>
DAVID RIESMAN, M.D.....	<i>Professor of Clinical Medicine.</i>
JOSEPH SAILER, M.D.....	<i>Professor of Clinical Medicine.</i>
M. HOWARD FUSSELL, M.D.....	<i>Professor of Applied Therapeutics.</i>
GEORGE W. NORRIS, M.D.....	<i>Assistant Professor of Medicine.</i>
H. R. M. LANDIS, M.D.....	<i>Assistant Professor of Medicine.</i>
WILLIAM PEPPER, M.D.....	<i>Assistant Professor of Clinical Pathology.</i>
ARTHUR A. STEVENS, M.D.....	<i>Lecturer on Medicine.</i>
B. FRANKLIN STAHL, M.D.....	<i>Lecturer on Dietetics of the Sick and Associate in Medicine.</i>
HERMAN B. ALLYN, M.D.....	
ALBERT P. FRANCINE, M.D.....	
E. H. GOODMAN, M.D.....	
GEORGE MORRIS PIERSOL, M.D....	
O. H. PERRY PEPPER, M.D.....	
F. H. KLAER, M.D.....	
JOHN M. CRUICE, M.D.....	
CLIFFORD B. FARR, M.D.....	
THOMAS A. COPE, M.D.....	
FRANK A. CRAIG, M.D.....	
ROBERT G. TORREY, M.D.....	
C. M. MONTGOMERY, M.D.....	
J. T. ULLOM, M.D.....	
THOMAS C. KELLY, M.D.....	
A. H. HOPKINS, M.D.....	
E. B. KRUMBHAAR, M.D.....	
A. A. HOWELL, M.D.....	
ARTHUR H. GERHARD, M.D....	
W. ESTELL LEE, M.D.....	

*Outline.*—The course in Medicine is a systematic one, beginning in the second half of the second year and leading up to the abundant opportunities for individual study of cases assigned to the students as ward workers in the fourth year. The details regarding the instruction are given later; the main features in the several years are as follows:

SECOND YEAR. *Physical Diagnosis.*—Lectures and practical work begin during the second half of the year. The course is designed to

teach the principles of physical diagnosis with exposition of the physical laws involved. Reference to diseases is avoided, but the bearing of physiological and anatomical facts on clinical investigation is emphasized.

*THIRD YEAR. Practical work in the Medical Dispensary.*—The students in small sections attend the Medical Dispensary for two hours one day in the week throughout the year. They are required to prepare histories, make physical examinations and assist in the work of the dispensary. The instructors demonstrate cases and correct the work done by the students. In addition the whole class divided in three sections attends clinical demonstrations one hour a week throughout the year.

*Laboratory work in Clinical Pathology.*—One lecture weekly to the whole class and section work of two hours one day in the week (sixty hours) throughout the year, comprise the work in this branch.

*Observation Classes and Medical Clinics.*—During the first half of the year the class attends clinical demonstrations of cases presented in groups to illustrate the external features of diseased conditions. During the second term two clinics weekly are given to extend the student's knowledge of disease.

*Systematic Lectures.*—The class with the fourth-year class attends two lectures weekly. These lectures are intended to present the relations of the fundamental sciences to practical medicine with sufficient attention to the systematic description of diseases to enable the student to grasp the meaning of the fundamental sciences in their relations to practical medicine.

*Applied Therapeutics.*—Two lectures weekly, illustrated by clinical cases, are given throughout the year to supplement the didactic lectures on medicine.

*Dietetics of the Sick.*—Lectures and practical demonstrations.

*FOURTH YEAR. Ward Work.*—Sections of the class are assigned to the wards of the University Hospital, the Philadelphia General Hospital and the Phipps Institute. During their work in these hospitals cases are assigned to the students so that each one has charge under the instructors and resident physicians of a certain number of cases and is required to record histories, daily notes of progress and the results of treatment and to make all necessary laboratory examinations. The student is in the wards three hours during five days in the week, and one hour daily one of the instructors makes rounds accompanied by the students in the ward.

*Ward Classes.*—A limited number of ward classes for a thorough and advanced discussion of important clinical conditions is held at the Philadelphia General Hospital.

*Clinical Conferences.*—The Professor of Medicine and the Professors of Clinical Medicine each give before the whole class one clinical conference in Medicine with the active co-operation of the students for the time being in attendance in the medical wards of the University or Philadelphia Hospital.

*Systematic Lectures.*—The class with the third-year class attends two lectures weekly as before described.

In general the course of instruction is so arranged that beginning in the second year the greatest amount of aid and personal instruction is given to the student in the earlier period of his studies and less supervision is exercised as his experience increases. The object is to encourage independence of work and thought as far as may be advantageous.

#### SECOND YEAR.

**PHYSICAL DIAGNOSIS.**—Dr. Norris gives lectures and demonstrations on physical diagnosis one hour a week during the last half of the year. These are devoted to an exposition of the general principles of the subject rather than to a study of the physical signs in special diseases.

In addition to the lectures, each student has two hours' practical work a week under Drs. Norris, Montgomery, Lee and Krumbhaar, the class being divided into small sections. These classes are devoted almost entirely to normal conditions, the signs of disease being used only as an occasional contrast to the normal, the actual study of signs of special diseases being carried out in the third year.

#### THIRD YEAR.

**SYSTEMATIC LECTURES.**—*Professor Stengel* lectures twice weekly to the third and fourth year classes completing in the two years the study of medical diseases. These lectures are intended as a general exposition of the relations of the fundamental sciences to practical medicine with a sufficient systematic description of diseases to furnish a basis for further study. In addition to the lectures topics for reading are assigned so that the student may be guided in his work.

**OBSERVATION CLASSES.**—*Dr. Stevens* conducts these classes, and follows the special purpose of training the student's powers of ob-

servation in recognizing the meaning of the objective signs of disease.

MEDICAL DISPENSARY.—The class is divided into small sections and assigned to the Instructors in the Medical Dispensary—*Drs. Repplier, Kelly, Howell and Musser*. The students take histories of new cases, make physical examinations and assist in the work of the Dispensary. Demonstrations of selected cases are made by the Instructors and various methods of clinical investigation are carried out with the assistance of the students.

One hour each week the whole class divided into three sections meets Drs. Klaer, Piersol and Goodman in the Medical Dispensary for special demonstrations designed to aid them in their individual work thus described.

Besides the regular work, many students avail themselves of the opportunities offered to act as clerks in the Dispensary of the University Hospital throughout the year, and in the same place or elsewhere during vacations.

APPLIED THERAPEUTICS.—*Professor Fussell* lectures twice weekly to the third-year class, with illustrative cases as the basis of discussion of methods of treatment. All forms of medical and non-medical therapeutics are discussed and as far as possible demonstrated before the students.

MEDICAL CLINICS.—During the second term *Drs. William Pepper and G. W. Norris* conduct clinics at the University Hospital, each one hour weekly. These are designed to advance the clinical experience of the students after the systematic lectures and dispensary work have prepared them for further clinical work.

CLINICAL LABORATORY COURSE.—*Dr. William Pepper* gives a lecture and demonstration one hour a week to the third-year class, and with Dr. Cope conducts the laboratory exercises. In these the class is divided into sections, each section receiving two hours' work each week, in practice on the methods of chemical and microscopical examination of the urine, blood, sputum, stomach contents, feces, etc.

DIETETICS OF THE SICK. *Dr. B. Franklin Stahl*.—One lecture a week during the last half of the year is given, with the purpose of providing the students an understanding of foods and their composition and preparation, and demonstrations are given of the methods of preparing various foods suitable for different individuals, the demonstrations being made sufficiently elementary to be readily

comprehended and remembered, and to illustrate the influence of cooking upon the food selected. The dietetic treatment of the various diseases is later taken up. The diet in disease is illustrated by showing trays of food prepared for patients suffering from diseases under consideration, and thus practical lessons are provided exhibiting the variety of diet that may be secured from a limited number of food materials.

#### FOURTH YEAR.

##### SYSTEMATIC LECTURES. (See Third Year.)

CLINICAL CONFERENCES.—*Professors Stengel, Riesman and Sailer* take up, in a systematically subdivided course, the discussion of all the important medical conditions, so that the whole subject may be illustrated so far as this is feasible—dangerously contagious diseases and others that do not occur in this region being, of course, excepted.

In these conferences, students who have studied the cases in the wards are called to the bedside before the class and discuss the cases with the lecturer, and at times contribute short papers on specially assigned subjects.

In all the above classes the students in charge of the case are required to report completely on the case in hand, including the history and general examination and any desirable clinical laboratory findings, the examination of the blood and urine being always required.

The conferences deal especially with questions of diagnosis or treatment.

WARD CLASSES.—*Drs. Stevens, Stahl and Allyn* meet sections three times weekly at the Philadelphia Hospital in advanced ward classes which deal especially with differential diagnosis and treatment. Drs. Francine and Repplier meet one-third of the class for two hours each week and demonstrate especially important cases from the rich material in the tuberculosis wards at the Philadelphia Hospital.

WARD WORK.—The medical ward work is arranged in periods of five weeks' continuous service in the medical ward at the University Hospital, five weeks at the Philadelphia Hospital and five weeks at the Phipps Institute. At the latter place the work is subdivided into a period in the wards studying non-tuberculous subjects under Dr. Craig, work in the Dispensary on cases of varied character under Drs. Landis, Ullom and Montgomery, attendance at "tuberculosis classes" under Dr. Landis, and a period of service outside in the social work of the Institute in which the student has opportunity

to meet some of the problems of home treatment as regards general hygiene, diet, occupation and various other practical problems of treatment, especially among the poor. In addition to the remarkable opportunities for studying chest disorders especially, that the Phipps Institute affords, a striking collection of anatomical and pathological preparations has been provided there which greatly illuminate questions of chest diagnosis.

At the University Hospital there are regular ward rounds on five days of the week by Professor Stengel and Drs. J. H. Austin and O. H. P. Pepper, and at the Philadelphia Hospital by Professors Riesman and Sailer, and Drs. Torrey, Farr and Krumbhaar. Some or all of these teachers are in the wards practically all of each morning, and the students are thus under supervision constantly, and advice is always at hand; but their work is done by themselves and at the ward rounds reports are made to the instructor on the nature, progress, etc., of each case by the student assigned to it, each student having several cases under his care. The group have opportunity to see all special kinds of treatment that goes on in the ward and to follow, and to some extent to suggest, the treatment of the cases under observation.

Each student thus gets over three months' experience in the medical wards, working three hours five mornings in the week, which is comparable to that of a hospital interne, with added constant aid and advice from senior instructors.

**LABORATORY WORK.**—Each student of the fourth-year class is supplied with a working place in the Clinical Laboratory, which is immediately adjacent to the hospital wards, where he is furnished with a locker containing all necessary apparatus. He is required to make routine examinations, in which assistance is available when needed, of all material from patients assigned to him in any of the departments during his final year. The laboratory is open at all times during the day, and the student has access to his working place at any leisure time for such work, or for any other laboratory work that he may desire to carry out. At the Phipps Institute laboratory facilities are provided for the students working there.

**OTHER EXTRAMURAL TEACHING.**—The roster is arranged so that the students of the third-year class are free to attend the medical clinics at the Pennsylvania or Philadelphia Hospitals on Saturdays. Other medical clinics may also be attended by the members of the same classes, and volunteer work in connection with various other hospitals is easily secured, particularly during vacation.

CLINICO-PATHOLOGICAL DEMONSTRATIONS.—All autopsies held at the University Hospital will be attended by the students on duty in the ward in which the case under examination occurred. The pathologist conducts the autopsy, the clinicians in charge of the case first explaining the clinical aspects of the condition.

NUMBER OF HOURS DEVOTED BY EACH STUDENT TO MEDICINE.

	<i>Second Year.</i>	Hours.
Lectures—Physical Diagnosis .....	16	
Practical Work—Physical Diagnosis .....	48	
 <i>Third Year.</i>		
Systematic Course in Medicine .....	64	
Systematic Therapeutic Course .....	64	
Observation Classes .....	16	
Dispensary .....	96	
Clinical Laboratory Course .....	96	
Clinical Medicine .....	32	
Lectures on Dietetics of the Sick .....	16	
 <i>Fourth Year.</i>		
Systematic Course in Medicine .....	64	
Clinical Conference .....	128	
Ward Classes .....	16	
Ward Work .....	160	
Lecture on History of Medicine .....	16	
Medical Research—Elective .....	64	
		896

PEDIATRICS.

J. P. CROZER GRIFFITH, M.D.....	<i>Professor of Pediatrics.</i>
THOMPSON S. WESTCOTT, M.D.....	{ <i>Associates in Pediatrics.</i>
MAURICE OSTHEIMER, M.D.....	
CHARLES A. FIFE, M.D.....	
HOWARD C. CARPENTER, M.D. ....	{ <i>Instructors in Pediatrics.</i>
J. CLAXTON GITTINGS, M.D.....	

The course in Pediatrics consists of lectures, ward classes and ward work at the University Hospital, the Philadelphia Hospital and the Children's Hospital.

The lectures are conducted by the Clinical Professor of Pediatrics in the medical amphitheatre of the University Hospital once a week. Special lectures are given upon the general diagnosis, symptomatology and treatment of disease in children. The more important subjects receive systematic and full discussion, among these being such topics as pneumonia of childhood, gastrointestinal diseases, typhoid fever in infancy and childhood, forms of paralysis, the feeding of infants, etc., etc. In addition to these, the Children's Ward and Dispensary are drawn upon for clinical lectures on the various diseases presenting themselves.

The ward classes are conducted at the University Hospital by Dr. Ostheimer, at the Children's Hospital by Dr. Westcott, and at the Philadelphia Hospital by Drs. Carpenter and Fife. Subsections of the class, consisting of from eight to fifteen students, attend these ward classes three times a week and have the opportunity of examining the patients under the direction of the instructor, and in addition learn the practical management of the diseases of children as conducted in the Hospital wards. The exceptional richness and variety of material afforded by the Children's Hospital make this part of the course a valuable feature. In addition to the work mentioned the students, in small groups, are assigned personal supervision of certain cases in the wards in the University Hospital making daily observations of them and attending the ward visits of the assistant pediatric physicians, Drs. Ostheimer, Gittings, Fife and Carpenter.

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## PHYSICAL THERAPY.

R. TAIT MCKENZIE, B.A., M.D. .... *Professor of Physical Therapy.*

Instruction in this subject consists of a course of lectures upon the application of massage, hydrotherapy, heat and light, in the treatment of disease.

These lectures begin in November and are given twice a week during the term at the Gymnasium or the University Hospital to members of the second-year class.

Special lectures are given from time to time to the fourth-year class.

The practical work and demonstrations are given in the Gymnasium and Department of Physical Therapy in the University Hospital.

## SURGERY.

EDWARD MARTIN, M.D.....	JOHN RHEA BARTON <i>Professor of Surgery.</i>
JOHN B. DEAVER, M.D.....	<i>Professor of the Practice of Surgery.</i>
CHARLES H. FRAZIER, M.D.....	<i>Professor of Clinical Surgery.</i>
HENRY K. PANCOAST, M.D.....	<i>Professor of Roentgenology.</i>
ALFRED C. WOOD, M.D.....	<i>Assistant Professor of Surgery.</i>
J. EDWIN SWEET, M.D. .....	<i>Assistant Professor of Surgical Research.</i>
RICHARD H. HARTE, M.D.....	<i>Adjunct Professors of Surgery.</i>
JAMES P. HUTCHINSON, M.D. ....	
JOHN B. CARNETT, M.D.....	<i>Associates in Surgery.</i>
JOHN H. JOPSON, M.D.....	
GEORGE P. MÜLLER, M.D.....	<i>Instructors in Surgery.</i>
T. TURNER THOMAS, M.D.....	
JOHN SPEESE, M.D.....	<i>Assistant Instructors in Surgery.</i>
BENJAMIN A. THOMAS, M.D.....	
GEORGE G. ROSS, M.D.....	<i>Assistant Instructors in Surgery.</i>
ALBERT D. WHITING, M.D.....	
DAMON B. PFEIFFER, M.D. ....	<i>Assistant Instructors in Surgery.</i>
A. P. C. ASHHURST, M.D.....	
JOHN BUSCH, M.D.....	<i>Assistant Instructors in Surgery.</i>
CHARLES F. MITCHELL, M.D.....	
ELDRIDGE L. ELIASON, M.D. ....	<i>Assistant Instructor in Operative Surgery.</i>
KARL SCHÄFFLE, M.D.....	
GEORGE M. LAWS, M.D.....	<i>Assistant Instructor in Operative Surgery.</i>
ROBERT H. IVY, M.D.....	
P. G. SKILLERN, M.D.....	<i>Assistant Instructor in Operative Surgery.</i>
DE FOREST P. WILLARD, M.D.....	
W. F. GUILFOYLE, M.D.....	<i>Assistant Instructor in Operative Surgery.</i>
ALEXANDER RANDALL, M.D.....	
L. H. LANDON, M.D.....	<i>Assistant Instructor in Operative Surgery.</i>
HENRY WINSOR, M.D.....	

The course in Surgery extends over a period of two years—the third and fourth years—and is conducted by the Professor of Surgery, Professor of Practice of Surgery, Professor of Clinical Surgery, Professor of Roentgenology, Assistant Professor of Surgery,

two Adjunct Professors, an Assistant Professor of Surgical Research, four Associates in Surgery and a corps of clinical instructors.

The course, which includes instruction in the principles and practice of surgery, in surgical pathology, in practical minor surgery, in operative surgery and in bedside, dressing room and dispensary practice, is so planned that the subject may be systematically covered in both theory and, in so far as this is practicable, in practice. The methods of teaching are designed to familiarize the student with the principles of pathogenesis, to develop his powers of observation, to familiarize him with the principles underlying treatment and to enable him, under supervision and subject to skilled criticism, to make practical application of this knowledge in the wards, the dispensaries, the clinical conferences and the operating room. Before graduation each student is required to have administered a general anæsthetic under skilled supervision to at least six patients.

The courses include: 1. Emergency Treatment. 2. Bandaging. 3. Minor surgery, including fracture dressings. 4. Surgical Pathology. 5. Dispensary service. 6. Clinical conferences and lectures. 7. Roentgenology. 8. Surgical research. 9. Operative surgery. 10. Ward classes. 11. Operating clinics. 12. Systematic lectures.

1. **EMERGENCY TREATMENT.** *Dr. Eliason.*—To the first-year class for one-half the year. Lectures and practical demonstration.

2. **BANDAGING.** *Dr. Whiting.*—For half the term men of the second-year class are given individual instruction in the fundamental principles underlying the use of the bandage and in its practical application, this drill being continued until each man is sufficiently expert to become serviceable in dispensary practice and ward work.

3. **MINOR SURGERY.** *Dr. Wood, assisted by Dr. Eliason and Dr. Busch.*—Third-year class one hour a week throughout the year. In this course the following subjects are described and illustrated: Preparations for operation, including the various surgical dressings and materials employed and their application; Indications for drainage and methods for securing it; Hemorrhage; Shock; Fixed dressings; Adhesive plaster; External applications; Venesection; Transfusion; Hypodermoclysis; Proctolysis; Anesthesia; Sutures; Ligatures; Hypodermic injections; Aspiration; Tapping; Individual drill in fracture dressing.

4. **SURGICAL PATHOLOGY.** *Dr. Speese.*—One hour a week during the first half of the fourth year. A clinical lecture illustrated by patients from the wards of the hospital. Minor diseases, such as wounds, cellulitis, ulcer, fistula, sinus, etc., are discussed and such

available material as may correlate is shown. Especial emphasis is laid upon the etiology and pathology of these diseases. This course of lectures is conducted in correlation and supplemental to the course in the Laboratory of Surgical Pathology, in charge of Dr. John Speese (see under Pathology). See also under Systematic Lectures in Surgery.

5. DISPENSARY SERVICE. *Dr. B. A. Thomas, assisted by Drs. Laws, Ivy and Willard.*—One month of dispensary service is required of each student before graduation. In addition to the dispensary of the University Hospital, the Howard (*Dr. Eliason*) and the Pennsylvania Hospitals (*Dr. Mitchell*) are available. The student serves as an assistant, thus becoming familiar with the treatment of sprains, fractures, dislocations, wounds and surface infections which constitute the majority of affections attending an Out-Patient Department. He is also given the opportunity to perform such minor surgical operations as naturally belong to such a service. The full service is usually made up voluntarily during vacation periods.

6. CLINICAL CONFERENCES AND LECTURES. *Dr. Frazier* conducts a clinical conference for one hour weekly before the fourth-year class, at which are discussed major surgical topics. It is illustrated by patients, lantern slides and charts.

*Drs. Wood and T. T. Thomas* each one hour a week to sections of the fourth-year class, each section one-third of the class. Patients are discussed by individual students in regard to the etiology, pathology and diagnosis and treatment of the surgical affections which they exhibit.

*Dr. Carnett*, one hour each week before the third-year class; clinical study of cases by individual students with discussion and criticism.

*Dr. Eliason*, one hour a week to the third-year class. Especial attention given to minor conditions requiring surgical treatment. Performance of minor operations by students.

*Dr. Ross*, one hour a week to third-year men, a clinical lecture following the lectures of the professor of surgery and the operations of the professor of the practice of surgery.

*Dr. Pfeiffer*, one hour a week to the fourth-year class devoted to a clinical lecture upon subjects cognate to the clinics of Professor Deaver and to demonstrations of surgical after-treatment.

7. ROENTGENOLOGY. *Professor Pancoast.*—A series of lectures and demonstrations covering the diagnostic and therapeutic application of X-rays, and the interpretation of radiograms.

8. SURGICAL RESEARCH. *Dr. Sweet.*—This is an elective course open to a limited number of men of the third and fourth year classes who by inclination and personal qualities demonstrate an especial fitness for the practice of surgery. The object of the course is to give such qualified men opportunity to practice the fundamental principles of surgery in work upon research problems which bear directly upon the betterment of surgical practice.

9. OPERATIVE SURGERY. *Dr. Jopson, assisted by Drs. Ashhurst, Eliason, Laws, Speese and Skillern.*

The course comprises didactic instruction given to the third-year class and practical work upon the cadaver. The theory and technique are covered by a series of weekly lectures, the general principles of Operative Surgery being emphasized and the steps in the various operations illustrated by diagrams, lantern slides and demonstrations on the cadaver.

For the practical work the class is divided into sections which work in the Laboratory of Operative Surgery performing the various operations upon the cadavers under the supervision of Dr. Jopson and his assistants. Special attention is paid to the typical major operations, to those included under emergency surgery and to the acquirement by the student of facility in general operative technique.

An Elective Course in Operative Surgery under the charge of Dr. Ashhurst, assisted by Dr. Winsor, open to the fourth-year men, is also given and exceptional facilities have recently been provided in the furnishing of a special operating room and ample equipment for this work. The students in this course practice with full attention to detail all the operations which can be demonstrated upon the cadaver.

10. WARD CLASSES. *Drs. Carnett, Müller, Eliason, Ross, Whiting, Pfeiffer and Landon.*—One-third of the class six hours a week for one-third of the term. Surgical patients are assigned to individual students; each student is required to make a complete physical examination with special reference to surgical lesions, carry out such special tests as are indicated and follow the progress of each patient assigned to his care, keeping a written record of the results of bedside observation and study. Laboratory facilities are provided for each student so that he may examine the blood, feces and urine when this is required. X-rays are available when such pictures are needed. The student is directed and supervised in his work and is encouraged to make suggestions relative to the care and treatment of the patient. He assists at the operations performed upon patients under his charge and, under supervision, is permitted to dress the wounds.

II. OPERATING CLINICS. *Professors Martin, Deaver, Frazier and Wood, and Drs. Carnett, T. T. Thomas and Müller.*

*Professor Deaver*, one-third the fourth-year class for two periods of two hours each for one-third of the term. Special attention is given to surgical diseases of the abdomen and an opportunity is afforded to students assigned to a case to take part in the operation.

*Professor Martin*, one-ninth of the fourth-year class for one period of three hours.

*Professor Frazier*, one-ninth of the fourth-year class for two periods of an hour and a half.

*Professor Wood and Drs. T. T. Thomas, Carnett and Müller*, one-ninth of the fourth-year class for a period of two hours.

12. SYSTEMATIC LECTURES. *Professor Martin*.—Two hours a week to the third and fourth-year classes.

*Dr. Müller*, one hour a week to the third-year class covering the general subjects of injury, infection and tumors, including wounds, hemorrhage, shock, embolus, cellulitis, abscess, ulcer, gangrene, peritonitis, etc., benign and malignant tumors. The lectures are illustrated where possible by lantern slides, charts or patients from the hospital wards.

NUMBER OF HOURS DEVOTED BY EACH STUDENT TO SURGERY.

*First Year.*

	Hours.
Emergency Treatment .....	16

*Second Year.*

Bandaging .....	40
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*Third Year.*

Systematic Lectures .....	192
Minor Surgery .....	32

*Fourth Year.*

Surgical Pathology (two hours a week for one-half the class).	32
Systematic Lectures .....	96
Surgical Clinics .....	53 $\frac{1}{8}$
Surgical Ward Classes .....	32
Operative Surgery, Required .....	16
Operative Surgery, Elective .....	51
Ward Work .....	90 $\frac{7}{8}$

	Hours.
Surgical Dispensary (Mural and Extramural; usually done in the vacation period) .....	24
Surgical Research, Elective .....	180
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Total .....	855

### ORTHOPEDIC SURGERY.

G. G. DAVIS, M.D., M.R.C.S., Eng., LL.D.....	<i>Professor of Orthopedic Surgery.</i>
JAMES K. YOUNG, M.D.....	<i>Associate Professor of Orthopedic Surgery.</i>
WALTER G. ELMER, M.D.....	
WILLIAM JACKSON MERRILL, M.D.....	<i>Instructors in Orthopedic Surgery.</i>
FRANK D. DICKSON, M.D.....	
DE FOREST P. WILLARD, M.D.....	<i>Assistant Instructors in Orthopedic Surgery.</i>
THOMAS A. O'HARA, M.D.....	

The instruction in Orthopedic Surgery is confined to the fourth year.

I. CLINICAL INSTRUCTION.—Clinical instruction is given one hour a week from February 1 to the close of the session. This course includes the surgical and mechanical treatment of congenital malformations, deficiencies and deformities; also of acquired distortions and deformities the result of disease or injury, joint and bone diseases, rickets, infantile spinal and cerebral paralysis, etc., etc.

II. WARD CLASS WORK. *Drs. Elmer, Merrill and Dickson.*—For ward teaching, the fourth-year class is divided into small sections, which meet once a week during the entire session. Cases in the wards and dispensary are employed to perfect each student in personal diagnosis and treatment. Instruction is also given in the application of apparatus, plaster-of-Paris and corrective dressings; the construction of braces; the treatment of lateral curvature, paralysis, etc. Each student is expected personally to perform all the necessary manipulations.

A specially equipped orthopedic gymnasium connected with this department is in daily use for demonstrating methods for the correction of deformities and the development of muscular power.

III. WORK IN OUT-PATIENT DEPARTMENT. Dispensary work is continued daily throughout the year. Students desiring special practical work can arrange for certain periods in the Dispensary.

## GENITO-URINARY DISEASES.

THOMAS R. NEILSON, M.D. .... *Professor of Genito-Urinary Diseases.*  
 E. HOLLINGSWORTH SITER, M.D. .... *Instructor in Genito-Urinary Diseases.*  
 ALEXANDER A. UHLE, M.D. ....  
 W. H. MACKINNEY, M.D. ....  
 JOHN L. LAIRD, M.D. ....  
 J. LEON HERMAN, M.D. .... } *Assistant Instructors in Genito-Urinary Diseases.*

Instruction in Genito-Urinary Diseases is given in the third and fourth years.

LECTURES. *Professor Neilson.*—To the third-year class, for one-half of the year, a systematic course of lectures is given, covering the surgical diseases and injuries of the genito-urinary organs, including the venereal diseases.

WARD CLASSES. *Professor Neilson and Drs. Siter, Uhle, Mackinney, Laird and Herman.*—Ward classes, for which the class is divided into sections, are held three times a week throughout the year. The students are afforded excellent opportunity to become familiar with the methods of diagnosis and treatment of diseases of the genito-urinary apparatus by personal observation, and by practical work under the guidance of the teachers. House cases requiring operation are operated on by the professor before the class.

At the Philadelphia Hospital subsections of the class receive instruction from Drs. Siter, Uhle and Mackinney in the Venereal Wards four times a week. The rich and abundant material which these wards offer gives to the student unsurpassed opportunities for observation and study.

## GYNECOLOGY.

JOHN G. CLARK, M.D. .... *Professor of Gynecology.*  
 HENRY D. BEYEA, M.D. ....  
 BROOKE M. ANSPACH, M.D. .... } *Associates in Gynecology.*  
 CHARLES C. NORRIS, M.D. ....  
 WILLIAM B. SMALL, M.D. .... } *Instructors in Gynecology.*  
 FLOYD E. KEENE, M.D. ....

The instruction in Gynecology extends throughout the third and fourth years and comprehends:

**THIRD YEAR**

I. RECITATION AND LANTERN DEMONSTRATIONS. One hour a week devoted either to recitations or to lantern demonstrations by Professor Clark. It is intended that the demonstrations shall fully supplement the recitations, thus rendering as clear as possible the histologic, anatomic and pathologic, as well as the operative side of Gynecology. The third-year instruction is entirely theoretic, and is intended to prepare the student for his practical work of the fourth year.

**FOURTH YEAR.**

II. CLINICAL WARD CLASSES. *Professor Clark or Dr. Anspach.*—Three times a week. The class is divided into sections, which attend the clinical ward classes. These sections are further subdivided into small groups of students who see all cases with the professor or instructors before any plan of treatment is instituted. The history of the case is carefully reviewed; and, instead of the usual clinical lecture preceding an operation, the special group of students for the day are closely quizzed on all points relative to diagnosis, treatment and prognosis. Immediately after the operation, all points on the technique of the operation, the post-operative care of the patient, the possible complications and the ultimate prognosis are fully considered.

III. CLINICAL CONFERENCE. *Dr. Chas. C. Norris and Dr. Keene.*—Once a week. During this Conference the clinical reporters for each ward class give in detail the histories of cases seen during the preceding week, with treatment and results. The instructor merely acts as a guide in these conferences, the students carrying the burden of the discussion.

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**DERMATOLOGY.**

MILTON B. HARTZELL, A.M., M.D., LL.D.. *Professor in Dermatology.*  
F. C. KNOWLES, M.D.....*Instructor in Dermatology.*

I. LECTURES.—One lecture weekly is given to the members of the entire third-year class, the subject-matter being descriptive of the commoner diseases of the skin as met with in this country. The lectures are abundantly illustrated by charts, paintings, photographs, wax and papier-maché models. The course begins October 1 and terminates February 1.

II. CLINICS.—Once weekly to the third-year class, February 1 to the close of the session. A number of cases are exhibited and commented on in such a manner as to render the clinical features of the disease plain.

III. WARD INSTRUCTION.—Four times weekly to sections of the fourth-year class in the wards of the Philadelphia General Hospital and in the Skin Dispensary of the University Hospital, the students thus coming in contact with cases.

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## OPHTHALMOLOGY.

GEORGE E. DE SCHWEINITZ, M.D. .... *Professor of Ophthalmology.*  
JOHN T. CARPENTER, M.D. .... *Lecturer in Ophthalmology.*  
EDWARD A. SHUMWAY, M.D. ....  
THOMAS B. HOLLOWAY, M.D. ....  
H. MAXWELL LANGDON, M.D. ....  
CARL WILLIAMS, M.D. .... } *Instructors in Ophthalmology.*

I. PRACTICAL WORK IN THE PHYSIOLOGICAL LABORATORY. The second-year men are each provided with suitable appliances, an optical box, an ophthalmoscope, an artificial eye, color tests, etc., and are instructed in the rudiments of physiological optics and in the physiology of the eye. This course, which consists of a series of laboratory hours, is conducted by the Professor of Physiology and his assistants.

II. LECTURE DEMONSTRATIONS AND CLINICAL LECTURES. *Professor de Schweinitz.*—These are given twice a week, from the first of October until the first of February, to members of the third-year class. The subjects covered in this course comprise the methods of examining the patient and the external examination of the eye; functional testing; diseases and injuries of the eye; the eye in its relation to general diseases; medical ophthalmoscopy and medical ophthalmology; and operative ophthalmology. The clinical lectures in this course continue throughout the academic year. Thirty-five hours are devoted to the entire course.

III. PRACTICAL WORK. *Drs. Carpenter, Shumway, Holloway, Williams and Langdon.*—Daily clinics are given in the Dispensary and in the wards of the Philadelphia Hospital. The students of the third-year class are divided into sections of about thirty men, and each of these sections subdivided into smaller sections of ten. Each sub-section has the opportunity in turn of closely inspecting the patients with external inflammatory diseases of the eye, of seeing the method of applying the remedies, of making the commoner applications utilized in the treatment, of learning the use of the ophthalmoscope so that each student may recognize the healthy fundus and its important diseased conditions; and of ascertaining the results secured by functional testing, such as the pupillary reflexes, the visual acuity, the field of vision, the balance of the external ocular muscles, and the refractive errors. The number of hours devoted to this course is forty-eight.

IV. The students of the fourth year have the opportunity of electing a continuation of the instruction in Ophthalmology by attendance on the clinical lectures, which continue throughout the academic year, and by work in the Eye Dispensary one hour weekly.

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## OBSTETRICS.

BARTON COOKE HIRST, M.D. ....	<i>Professor of Obstetrics.</i>
RICHARD C. NORRIS, M.D. ....	<i>Assistant Professor of Obstetrics.</i>
JOHN H. GIRVIN, M.D. ....	
WILLIAM R. NICHOLSON, M.D. ...	<i>Associates in Obstetrics.</i>
JOHN C. HIRST, M.D. ....	
J. H. ALLEN, M.D. ....	
L. F. LUBURG, M.D. ....	
E. P. BARNARD, M.D. ....	<i>Assistant Instructors in Ob-</i>
N. L. KNIFE, M.D. ....	<i>stetrics.</i>
C. D. DANIELS, M.D. ....	

A graduated course of instruction in Obstetrics is given to the members of the third and fourth-year classes in the Maternity Pavilion of the University Hospital, in the New Medical Laboratories and in the Out-Patient Department of the Hospital, conducted under the direct control of the Professor of Obstetrics.

I. CLINICS. *Professor Hirst*.—Two clinical lectures a week are given to the third-year class, the large clinical material of the Maternity Department being used to illustrate a systematic course of lectures on the complications of gestation, labor and the puerperium.

II. DEMONSTRATIONS. Demonstrations of palpation, pelvimetry and the signs of pregnancy are given to sections of four students; routine examinations of urine; attendance on labor cases; demonstrations of the injuries of parturition and their repair.

III. CLINICAL AND OPERATIVE OBSTETRICS. *Professor Hirst*.—One clinic a week to a third of the fourth-year class, devoted to the surgical treatment of all the complications and pathological consequences of the childbearing act at all periods, is given in the maternity amphitheatre. One clinical conference a week devoted mainly to diagnosis.

IV. WARD WORK. Every morning from 10 to 12 a small section of the class assists in the repair of injuries of the genital canal, in the closure of abdominal wounds, in the local treatment of genital infections, the final examination of the puerpera, etc. A special course in cystoscopy is given.

V. OBSTETRICAL OPERATIONS. *Professor Hirst*.—In the Anna Dike Scott Memorial Amphitheatre an exhibition of all obstetrical operations is given to the members of both the third and fourth-year classes.

VI. PRACTICAL EXERCISES WITH MANIKINS AND FETAL BODIES. *Assistant Professor Norris*.—Each student devotes eight hours to the practice upon the manikin of the obstetrical operations.

VII. PRACTICAL EXERCISES IN THE OUT-PATIENT DEPARTMENT. This department is under the direct control of the Professor of Obstetrics. The total indoor and outdoor service amounts to 2000 cases a year. The complicated cases in this service demanding operative treatment are transported to the University Hospital, and the operations are exhibited to the combined third and fourth-year classes. Each student attends in confinement from six to eight labor cases and serves as assistant in the ambulatory dispensary for a week, where he is trained in gynecological diagnosis.

## NEUROLOGY.

CHARLES K. MILLS, M.D. .... *Professor of Neurology.*  
WILLIAM G. SPILLER, M.D. .... *Professor of Neuropathology and  
Associate Professor of Neu-  
rology.*  
JAMES W. McCONNELL, M.D. .... *Associate in Neurology.*  
ALFRED R. ALLEN, M.D. .... } *Associates in Neurology and in  
S. D. LUDLUM, M.D. .... } *Neuropathology.*  
N. S. YAWGER, M.D. .... *Instructor in Neurology.*  
WILLIAMS B. CADWALADER, M.D.  
SAMUEL LEOPOLD, M.D. .... } *Instructors in Neurology and in  
EDWARD M. WILLIAMS, M.D. ... } *Neuropathology.***

I. CLINICAL LECTURES. *Professors Mills and Spiller.*—One clinical lecture a week is given to the fourth-year students at the University Hospital throughout the entire year, during the first half of the session by Professor Mills, and during the second half by Professor Spiller.

II. CLINICAL LECTURES (*Continued*). One lecture a week is also given to the fourth-year class during the first half of the session at the Philadelphia General Hospital. An effort is made to systematize the teaching, especially at the Philadelphia General Hospital, where the large amount of material always at command enables the teacher to select and arrange beforehand the subjects to be discussed.

III. WARD CLASS INSTRUCTION. *Dr. McConnell, Dr. Ludlum and other Instructors.*—This instruction is given during one-half of the year, both in the University and in the Philadelphia General Hospital. The class is divided into small sections, so as to give each student the opportunity of personally investigating the cases under the supervision of the instructors.

IV. WARD WORK. Ward work in neurology, similar to that described under instruction in medicine for the fourth year, is given in the University Hospital by Dr. Leopold, Dr. Yawger and Dr. Cadwalader under the supervision of the professors in neurology. This ward work is in addition to the ward classes above described.

V. INSTRUCTION IN OUT-PATIENT DEPARTMENT. *Dr. McConnell, Dr. Allen and other Instructors.*—In connection with the teaching

given in the wards of the University and Philadelphia General Hospitals, advantage is taken of the large outdoor neurological service, sections being instructed in the dispensary at times previously arranged. In this way the students are brought in contact with nervous diseases in their earlier as well as in their later manifestations. The methods of studying, recording and treating cases are taught. Lectures and demonstrations in electrotherapeutics are given by Dr. S. Leopold. The electromedical apparatus used in the outdoor service is of the most modern type, including static, galvanic and faradic instruments. Instruction is given in the use of the methods now employed in the treatment of diseases of the nervous system.

**VI. NEUROPATHOLOGY.** *Professor Spiller, assisted by Dr. Allen, Dr. Ludlum, Dr. Leopold, Dr. Cadwalader and Dr. Williams.*—One hour and a half a week to each member of the third-year class, during October and November. The course is open also to post-graduate students. The work is in part clinical. The students are shown various gross pathological specimens, and are taught the signs and symptoms caused by the lesions represented by these specimens. In this way they receive much instruction in the physiology as well as the pathology of the nervous system. Where considered desirable, the clinical history of the case illustrated is given. The students are taught the practical application of their knowledge of anatomy and physiology and are prepared for their fourth year clinical work in neurology. Microscopical sections illustrating many pathological conditions are demonstrated by the lantern to the entire class one hour each week during December and January, so that the students are enabled to study the more minute morbid changes occurring in diseases of the nervous system, and to understand the symptoms produced by them. The technique employed in investigation is also taught so far as possible, so as to include the methods of imbedding, cutting, staining, etc., employed in this branch of medicine. The students are in this way prepared to conduct original investigations in the pathology of the nervous system after their graduation, if they so desire. Instruction is also given in the methods of preparation of the brain and cord for gross examination, so that the nervous tissues may not be injured for microscopical study.

## MENTAL DISEASES.

CHARLES W. BURR, M.D. .... *Professor of Mental Diseases.*

All instruction in Mental Diseases is given in the Philadelphia General Hospital. Throughout the year one hour each week is given the third-year class. The first five lectures are systematic, dealing with the aetiology and general symptomatology of such affections, all the remainder being clinical lectures. In the fourth year each student attends not less than ten ward class periods, in each of which he examines the patient himself, reporting his findings and diagnoses to the professor for criticism. Especially in these latter exercises he obtains an insight into the general workings of asylum management.

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## LARYNGOLOGY AND RHINOLOGY.

CHARLES P. GRAYSON, M.D. .... *Professor of Laryngology and Rhinology.*

WALTER S. HARGETT, M.D. .... *Instructor in Laryngology.*

D. N. HUSIK, M.D. .... }  
E. C. BENDER, M.D. .... } *Assistant Instructors in Laryngology.*

I. LECTURES AND CLINICS. *Professor Grayson.*—From January to May there is a course of weekly lectures given to the third-year class, covering the anatomy and physiology of the upper air and digestive tracts, these being illustrated by drawings and by dry and wet preparations. The diseases of the nose and its accessory cavities, of the pharynx, the fauces and the larynx, are systematically studied; and in connection with their causation and treatment, emphasis is laid upon the pathologic and therapeutic importance of the systemic conditions with which they are often associated. The surgery of these special regions is also thoroughly demonstrated during the course by a series of clinics.

II. PRACTICAL WORK IN OUT-PATIENT DEPARTMENT. *Professor Grayson and assistants.*—Throughout equal periods of the session the fourth-year class attends this course, divided into sections of such size that each student receives an abundance of practical work under the personal supervision of Dr. Grayson and his assistants. The very large service of this dispensary provides ample material for the

members of the class to acquire proficiency in the use of the various instruments of examination and treatment, and to become expert in the diagnosis and treatment of the diseases that are more often encountered in general practice.

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## OTOLOGY.

B. ALEXANDER RANDALL, M.D.....	<i>Professor of Otology.</i>
RALPH BUTLER, M.D. ....	<i>Instructor in Otology.</i>
BENJAMIN D. PARISH, M.D. ....	
JAMES A. BABBITT, M.D. ....	
ISAAC H. JONES, M.D. ....	
LEWIS FISHER, M.D. ....	

*Assistant Instructors in Otology.*

I. LECTURES. *Professor Randall.*—The instruction in the second half of the third year consists of a course of lectures, partly clinical, but with abundant illustrations by anatomical and pathological preparations, models, charts and the stereopticon. Operations for diseases of the mastoid and lateral sinus and abscess of the brain are demonstrated on the cadaver, if not upon patients.

II. PRACTICAL WORK. *Professor Randall and Dr. Butler.*—Practical work is given to the fourth-year class in subsections of ten or less, in the newly equipped Out-Patient Department or wards of the University Hospital. Individual instruction is given by the dispensary staff in the examination, recording and treatment of patients, the work being delegated to the students so far as they may show themselves competent. All are thus drilled in the use of the head-mirror, in rhinoscopy and Eustachian catheterization, as well as in simpler measures. In mastoid and other operations selected students assist or operate under strict supervision, and follow the cases in the later dressings. Stress is laid throughout upon simplicity in the essential methods of diagnosis and treatment, with minute and conscientious care in application.

## FIRST-YEAR CLASS, 1912-1913.

## ORDER OF INSTRUCTION, DAILY, BEFORE FEB. 1.

<i>M</i> o <i>r</i> s.	<i>M</i> onday.	<i>T</i> uesday.	<i>W</i> ednesday.	<i>T</i> hursday.	<i>F</i> riday.	<i>S</i> aturday.
A. M.	CORNELL. Osteology	TAYLOR. Physiological Chemistry.	TAYLOR. Physiological Chemistry.	TAYLOR. Physiological Chemistry.	ABBOTT. Bacteriology.	
A. M.	Laboratory of Physiological Chemistry.	Laboratory of Physiological Chemistry.	Laboratory of Histology and Embryology.	Laboratory of Physiological Chemistry.	Laboratory of Physiological Chemistry.	Laboratory of Histology and Embryology.
2 M.						
P. M.						
P. M.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	
P. M.	PIERSOL. Anatomy.	PIERSOL. Anatomy.	PIERSOL. Anatomy.	TAYLOR. Physiological Chemistry.	TAYLOR. Physiological Chemistry.	
P. M.		Gymnasium.			Gymnasium.	

or the first period of 48 working days the class will work in the period from 1.30 to 4 P. M., in the Osteological Laboratory daily; thereafter in the same hours in the Dissecting Room.

first Period from September 30 to November 23—48 working days.

second Period from November 25 to January 25—41 working days.

FIRST-YEAR CLASS, 1912-1913.

## ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

<i>Hours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>	<i>Saturday.</i>
9 A. M.						
10 A. M.	Bacteriological Laboratory.	Bacteriological Laboratory.	Laboratory of Histology and Embryology.	Bacteriological Laboratory.	Bacteriological Laboratory.	Laboratory Histology at Embryolog
11 A. M.						
12 M.						
1 P. M.						
2 P. M.	Dissection.	Dissection.	Dissection.	Dissection.	Dissection.	
3 P. M.						
4 P. M.	PIERSOL. Anatomy.	PIERSOL. Anatomy.	PIERSOL. Anatomy.	ELIASON. Emergency Treatment.	STEVENS. Medical Terminology.	
5 P. M.		Gymnasium.			Gymnasium.	

## SECOND-YEAR CLASS, 1912-1913.

## ORDER OF INSTRUCTION, DAILY, BEFORE FEB. 1.

hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
A. M.	Pathological Laboratory.	Pathological Laboratory.	Physiological Laboratory.	RICHARDS. Pharmacology.	Pathological Laboratory.	Pharmacological Conference. Section B.
A. M.				Physiological Laboratory.		Physiological Laboratory.
A. M.	RICHARDS. Pharmacology.	SMITH. Pathology.	SMITH. Pathology.		SMITH. Pathology.	
2 M.						
P. M.	First Period. Dissection.	First Period. Dissection.	First Period. Dissection.	First Period. Dissection.		
P. M.	Second Period. Pharmacological Laboratory. Sect. A.	Second Period. Pharmacological Laboratory. Sect. B.	Second Period. Pharmacological Laboratory. Sect. A.	Second Period. Pharmacological Laboratory. Sect. B.	First Period. Dissection.	
P. M.	REICHERT. Physiology.	REICHERT. Physiology.	Pharmacological Conference. Section A.	REICHERT. Physiology.	REICHERT. Physiology.	
P. M.	MCKENZIE. Physical Therapy.		MCKENZIE. Physical Therapy.			

The class is divided into two sections, A and B, for work in the Laboratory of Pharmacology and for Pharmacological Conferences; elsewhere the entire class is accommodated at each period scheduled.

First Period from September 30 to November 23—48 working days.

Second Period from November 25 to January 25—41 working days.

## SECOND-YEAR CLASS, 1912-1913.

## ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9 A. M.	Pathological Laboratory.			RICHARDS. Pharmacology.	Pathological Laboratory.	RICHARDS. Pharmacology.
10 A. M.		Pathological Laboratory.	Physiological Laboratory.			
11 A. M.	Physical Diagnosis. Section A.			Physiological Laboratory.	Physical Diagnosis. Section B.	Physiological Laboratory.
	Pharmacological Conference. Section B.	SMITH. Pathology.	SMITH. Pathology.		Pharmacological Conference. Section A.	
12 M.						
1 P. M.						
2 P. M.	Pharmacological Laboratory. Section A.	Toxicology Laboratory.	Pharmacological Laboratory. Section B.	THOMAS. Applied Anatomy.	THOMAS. Applied Anatomy.	
3 P. M.	Bandaging. Section B.		Bandaging. Section A.	MARSHALL. Toxicology.	SMITH. Pathology.	
4 P. M.	REICHERT. Physiology.	REICHERT. Physiology.	NORRIS. Physical Diagnosis.	REICHERT. Physiology.	REICHERT. Physiology.	
5 P. M.	MCKENZIE. Physical Therapy.		MCKENZIE. Physical Therapy.			

HOUR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A. M.	JOPSON, Surgical Operative Technique (before Feb. 1).  NEILSON, Genito-Urinary Surgery (after Feb. 1).	BURR. Mental Diseases.	HARTZELL. Dermatology (before Feb. 1).  G. W. NORRIS, Clinical Medicine (after Feb. 1).	Demonstrations in Neuropathology (before Dec. 1).  Practical Therapeutics (after Dec. 1).	Morbid Anatomy.  Demonstrations in Gross Pathology.  Practical Therapeutics (before Dec. 1).  Practical Therapeutics (after Dec. 1).	PEPPER. Clinical Pathology.
10 A. M.	MULLER. Surgery.	SMITH. Pathology.	MULLER. Clinical Surgery (before Feb. 1).  STAHL. Dietetics of Sick (after Feb. 1).	A. C. WOOD. Minor Surgery.	SMITH. Pathology.	STEVENS. Medical Observation (before Feb. 1).  W. PEPPER. Clinical Medicine.  Practical Therapeutics (after Dec. 1).
11 A. M.			SPILLER. (Before Feb. 1).  HARTZELL. Dermatological Clinic (after Feb. 1).	CARNETT. Surgery.	MARTIN. Surgery.	FUSSELL. Applied Therapeutics.
12 M.		MARTIN. Surgery.				
1 P. M.						
2 P. M.						
3 P. M.						
4 P. M.						

SESSION 1912-1913.

**Schedule of Practical Instruction for Third-Year Class.**

For practical instruction in Neuro-pathology, Practical Therapeutics and Gross Morbid Anatomy the class is divided into two sections, numbered 1 and 2; for practical work in all other subjects the class is divided into three sections (A, B and C), each of which is subdivided into four subsections (as A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>) for ward classes in Medicine.

Subject.	Mon.	Tue.	Wed.	Thur.	Fri.
Neuro-pathology . . . . .	—	—	I	2	—
Gross Morbid Anatomy . . . . .	—	—	2	1	—
Practical Therapeutics . . . . .	—	—	I	2	—
Medical Ward Class . . . . .	C	A	—	B	—
Ophthalmological Ward Class . . . . .	C	A	—	B	—

**SUBSECTIONS OF WARD CLASS IN MEDICINE AND MEDICAL DISPENSARY.**

Medical Dispensary, 2-4 P. M.

	Sept. 30 to Nov. 23.			Nov. 25 to Feb. 1.			Feb. 3 to Mar. 29.			Mar. 31 to May		
	Mon.	Tues.	Thur.	Mon.	Tues.	Thur.	Mon.	Tues.	Thur.	Mon.	Tues.	Thur.
DR. MUSSER . . . . .	A <sup>1</sup>	B <sup>1</sup>	C <sup>1</sup>	A <sup>2</sup>	B <sup>2</sup>	C <sup>2</sup>	A <sup>3</sup>	B <sup>3</sup>	C <sup>3</sup>	A <sup>4</sup>	B <sup>4</sup>	C
DR. HOWELL . . . . .	A <sup>2</sup>	B <sup>2</sup>	C <sup>2</sup>	A <sup>3</sup>	B <sup>3</sup>	C <sup>3</sup>	A <sup>4</sup>	B <sup>4</sup>	C <sup>4</sup>	A <sup>1</sup>	B <sup>1</sup>	C
DR. KELLY . . . . .	A <sup>3</sup>	B <sup>3</sup>	C <sup>3</sup>	A <sup>4</sup>	B <sup>4</sup>	C <sup>4</sup>	A <sup>1</sup>	B <sup>1</sup>	C <sup>1</sup>	A <sup>2</sup>	B <sup>2</sup>	C
DR. REPPPLIER . . . . .	A <sup>4</sup>	B <sup>4</sup>	C <sup>4</sup>	A <sup>1</sup>	B <sup>1</sup>	C <sup>1</sup>	A <sup>2</sup>	B <sup>2</sup>	C <sup>2</sup>	A <sup>3</sup>	B <sup>3</sup>	



**SESSION OF 1912-1913. FOURTH-YEAR CLASS.**

**Sectional Ward Classes in Surgery, Genito-Urinary Surgery and Specialties.**

For practical instruction in all subjects the class is divided into three sections, each of which is divided into subsections and each student is given a number, as 1, 2, etc. Students assigned to instruction in Operative Surgery, to attendance at the Southeastern Dispensary or at the Municipal Hospital, are excused from other work scheduled for the same hours.

Hour	Subject	MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY			
		Oct. 7 to Dec. 21	Jan. 3 to Mar. 8	Mar. 10 to May 17	Oct. 7 to Dec. 21	Jan. 3 to Mar. 8	Mar. 10 to May 17	Oct. 7 to Dec. 21	Jan. 3 to Mar. 8	Mar. 10 to May 17	Oct. 7 to Dec. 21	Jan. 3 to Mar. 8	Mar. 10 to May 17	Oct. 7 to Dec. 21	Jan. 3 to Mar. 8	Mar. 10 to May 17	
11-1 WED.	Operative Obstetrics Dr. Deaver, Surg. Clinic U. of Pa. Hospital							35-68	69-102	1-31							
11-1 FRI.	Dr. Deaver, Surg. Clinic U. of Pa. Hospital																
3-6 THURS.	Dr. Deaver, Surg. Clinic German Hospital				35-102 1-34	1-34 and 69-102 35-68	1-68	69-102 1-34	1-34 35-68	35-68 69-102	69-102	1-34	35-68	69-102	1-31	35-68	
11-1 WED. 12-1 TUE. } 12-1 WED. 12-1 FRI. }	Surgery Genito-Urinary																
		Oct. 7 to Nov. 23	Nov. 25 to Jan. 25	Jan. 27 to Mar. 20	Mar. 25 to May 17	Oct. 7 to Nov. 23	Nov. 25 to Jan. 25	Jan. 27 to Mar. 20	Mar. 25 to May 17	Oct. 7 to Nov. 23	Nov. 25 to Jan. 25	Jan. 27 to Mar. 20	Mar. 25 to May 17	Oct. 7 to Nov. 23	Nov. 25 to Jan. 25	Jan. 27 to Mar. 20	Mar. 25 to May 17
		1-34	1-34	1-34	1-34					35-68	35-68	35-68	35-68				
		35-12	43-51	52-60	61-68					69-76	77-83	86-94	95-102				
		43-51	52-60	61-68	35-42					77-85	86-94	95-102	69-76				
3-4	Otolaryngology	52-68	35-42	35-51	43-60					86-102	95-102	69-85	77-94				
										18-26	27-34	1-8	9-17				
	Pediatrics	86-94	95-102	69-76	77-85					27-31	18-26	9-17	1-8				
		95-102	86-91	77-85	69-76					1-17	1-17	18-34	18-34				
	Orthopedics	69-85	69-85	86-102	86-102												
	Medicine																
5-6	Obstetrics	69-102	1-34	35-68													

\* See Table No. 2.

† See Table No. 3.

‡ See Table No. 1.

No. 1. SUBSECTIONS OF WARD CLASS IN MEDICINE.—3 P. M.

	Oct. 7 to Nov. 23			Nov. 25 to Jan. 25			Jan. 27 to Mar. 20			Mar. 25 to May 17		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
DR. ALLVN .....	69-76	1-8	35-42	77-85	9-17	43-51	86-94	18-26	52-60	95-102	27-34	61-68
DR. STEVENS } ....	77-85	9-17	43-51	69-76	1-8	35-42	95-102	27-34	61-68	86-94	18-26	52-60

No. 2. SUBSECTIONS OF WARD CLASS IN NEUROLOGY.—3 P. M.

	Oct. 7 to Nov. 9			Nov. 11 to Dec. 14			Dec. 16 to Jan. 25		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
DR. LEOPOLD, UNIVERSITY HOSPITAL.....	1-11	35-45	69-79	12-22	46-56	80-90	23-34	57-68	91-102
DR. McCONNELL, PHILADELPHIA HOSPITAL..	12-22	46-56	80-90	23-34	57-68	91-102	1-11	35-45	69-79
DR. LUDLUM, PHILADELPHIA HOSPITAL .....	23-34	57-68	91-102	1-11	35-45	69-79	12-22	46-56	80-90

No. 3.

	Oct. 7 to Oct. 26			Oct. 28 to Nov. 9			Nov. 11 to Nov. 23			Nov. 25 to Dec. 14			Dec. 16 to Jan. 11			Jan. 13 to Jan. 25			Jan. 27 to Feb. 8			Feb. 10 to Mar. 1			Mar. 3 to Mar. 20			Mar. 25 to Apr. 12			Apr. 14 to Apr. 26			Apr. 28 to May 17		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.			
CHILDREN'S HOSPITAL..	61-68	86-91	27-34	86-94	18-26	52-60	52-60	95-102	18-26	35-42	95-102	1-8	95-102	27-34	27-34	61-68	69-76	9-17	43-51	69-76	9-17	35-42	77-85	1-8	69-76	79-85	18-26	43-51	86-94	9-17	77-85	9-17	43-51			
UNIVERSITY HOSPITAL..	86-94	18-26	52-60	52-60	95-102	18-26	61-68	86-94	18-26	52-60	95-102	27-34	61-68	69-76	9-17	27-34	61-68	9-17	43-51	69-76	9-17	35-42	77-85	1-8	77-85	9-17	43-51	52-60	77-85	18-26	43-51	86-94	9-17			
PHILADELPHIA HOSPITAL	52-60	95-102	18-26	61-68	86-94	27-34	35-42	95-102	61-68	95-102	27-34	1-8	35-42	77-85	1-8	69-76	1-8	35-42	43-51	9-17	43-51	69-76	9-17	35-42	77-85	1-8	77-85	9-17	43-51	52-60	77-85	18-26	43-51	86-94	9-17	

WARD WORK.

	Oct. 7 to Dec. 21			Jan. 3 to Mar. 8			Mar. 10 to May 17			
	Oct. 7 to Nov. 9, 1-17	Nov. 11 to Dec. 21, 18-34	35-68	Jan. 3 to Feb. 1, 35-51	Feb. 3 to Mar. 8, 52-68	69-102	Mar. 10 to Apr. 12, 69-85	Apr. 14 to May 17, 86-102	1-34	35-68
Medical Wards University Hospital	1-34									
Medical Wards Blockley Hospital										
Surgical Wards University Hospital										
Phipps Institute and Specialties §	35-68	Oct. 7 to Nov. 9, 35-51 Nov. 11 to Dec. 21, 52-68	18-34	69-102	Jan. 3 to Feb. 1, 69-85 Feb. 3 to Mar. 8, 86-102	1-34	Mar. 10 to Apr. 12, 1-17 Apr. 14 to May 17, 18-34	1-34	35-68	1-17

The section scheduled for Phipps Institute will go to the Tuberculosis Wards, Philadelphia Hospital, every Tuesday, 10-12.

§ See Table No. 4.

No. 4. SUBSECTION SCHEDULE FOR WARD WORK IN SPECIALTIES

First Period, October 7 to December 21

Subject	Oct. 7 to Oct. 17	Oct. 18 to Oct. 29	Oct. 30 to Nov. 9	Nov. 11 to Nov. 21	Nov. 22 to Dec. 7	Dec. 9 to Dec. 21
Obstetrics .....	52-66	63-68	57-62	35-39	45-51	40-44
Dermatology (Philadelphia Hospital). .	57-62	52-56	63-68	40-44	35-39	45-51
Venereal (Philadelphia Hospital) .....	63-68	67-62	52-56	45-51	40-44	35-39
Second Period, January 3 to March 8						
Subject	Jan. 3 to Jan. 13	Jan. 14 to Jan. 23	Jan. 24 to Feb. 1	Feb. 3 to Feb. 14	Feb. 15 to Feb. 26	Feb. 27 to Mar. 8
Obstetrics .....	86-90	97-102	91-96	69-73	79-85	74-78
Dermatology (Philadelphia Hospital). .	91-96	86-90	97-102	74-78	69-73	79-85
Venereal (Philadelphia Hospital) .....	97-102	91-96	86-90	79-85	74-78	69-73
Third Period, March 10 to May 17						
Subject	Mar. 10 to Mar. 20	Mar. 25 to Apr. 3	Apr. 4 to Apr. 12	Apr. 14 to Apr. 25	Apr. 26 to May 7	May 8 to May 17
Obstetrics .....	18-22	29-34	23-28	1-5	11-17	6

HOUR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A. M.	CLARK. Operative Gynecology.	CLARK. Operative Gynecology.	CLARK. Operative Gynecology.	Gynecology.	CLARK. Operative Gynecology.	FRAZIER. Clinical Surgery.
10 A. M.	Ward Work, Medicine, Specialties, Ward Work.	Ward Work, Medicine, Specialties, Ward Work.	Ward Work, Medicine, Specialties, Ward Work.	Ward Work, Medicine, Specialties, Ward Work.	Ward Work, Medicine, Specialties, Ward Work.	HIRST. Obstetrics.
11 A. M.	Ward Work, Surgery.	Ward Work, Surgery.	Ward Work, Surgery.	Ward Work, Surgery.	Ward Work, Surgery.	GRIFFITH. Pediatrics.
1 P. M.	MARTIN. Surgery.	MARTIN. Surgery.	HIRST. Operative Obstetrics.	HIRST. Operative Obstetrics.	DEAVER. Surgical Clinic.	
2 P. M.	ABBOTT. Hygiene (before Feb. 1).	ABBOTT. Hygiene (before Feb. 1).	MILLS and SPILLER. Neurological Clinic.	SAILER. Clinical Conference.	MILLS and SPILLER. Neurological Clinic (before Feb. 1).	
3 P. M.	DAVIS. Orthopedic Surgery (after Feb. 1).	Laboratory of Surgical Pathology, Section. Operative Surgery Laboratory, Section.	Ward Classes. See Schedule of Practical Instruction.	Laboratory of Surgical Pathology, Section.	Ward Classes. See Schedule of Practical Instruction.	DKEAVER. Surgical Clinic, German Hospital, Section.
4 P. M.	STENGEL. Medicine.	RIESMAN. Clinical Conference.	RIESMAN. Clinical Conference.	Operative Surgery, Laboratory, Section.	STENGEL. Medicine.	Research Medicine, Elective, Section.
5 P. M.	Operative Obstetrics, Laboratory, Section. Research Medicine, Elective, Section.	STENGEL. Clinical Conference.	PACKARD. Medical History. (before Feb. 1).			

## TEXT-BOOKS.

## Text-Books.

*Anatomy*: Piersol's Text-book of Anatomy; Piersol's Normal Histology; Cunningham's or Heisler's Practical Anatomy; Villiger's Brain and Spinal Cord.

*Bacteriology*: Abbott's Principles of Bacteriology; Harris' edition of Muir and Ritchie's Manual of Bacteriology; Hiss and Zinsser's Text-book of Bacteriology; Park's Pathogenic Bacteria and Protozoa; Frost and McCampbell's General Bacteriology.

*Physiological Chemistry*: Bunge's Organic Chemistry for Medical Students, or Remsen's Organic Chemistry; Abderhalden's Text-book of Physiological Chemistry, Lusk's The Science of Nutrition, or Taylor's Digestion and Metabolism.

*Physiology*: Howell's or Starling's Physiology; Krehl's Pathologische Physiologie, or the translation by Hewlett; Krehl's Clinical Pathology; Villiger's Brain and Spinal Cord, translation by Piersol.

## Collateral Reading.

Cunningham; Gray; Morris; Spalteholz; Sobotta's Histology (edited by Huber); Heisler's Embryology; McMurrich's Embryology.

Enzymes and their Application; Effront; Rickett's Infection, Immunity and Serum Therapy; Wright's Studies in Immunization; Herter's Bacterial Infections of the Digestive Tract; Ehrlich-Bolduan's Studies in Immunity; Bordet-Gay's Studies in Immunity; Vernon's Intracellular Enzymes.

American Text-book of Physiology; Shäfer's Text-book of Physiology.

## Text-Books.

*Pathology:* For general use, Stengel's Text-book of Pathology or Adami and McCrea's Pathology; for Aetiology, Roger's Principles of Medical Pathology; for Pathological Anatomy and Histology, Delafield and Prudden; for Pathological Physiology, Krehl's Clinical Pathology and Wells' Chemical Pathology; for Pathological Technology, Mallory and Wright.

*Medicine:* Tyson's Text-book of Medicine; Musser's Medical Diagnosis.

*Surgery:* Da Costa's Modern Surgery; American Text-book of Surgery; Stewart's Manual of Surgery; Martin's Surgical Diagnosis; Binnie, Manual of Operative Surgery; Bickham's Operative Surgery; Brewer's Text-book of Surgery; Willard's Surgery of Childhood including Orthopaedic Surgery; White and Martin, Genito-Urinary and Venereal Diseases; Manual of Surgery, Thomson and Miles; Dislocations and Joint Fractures, F. J. Cotton.

## Collateral Reading.

Ziegler's General and Special Pathological Anatomy; Orth's Lehrbuch der Speciellen Pathologischen Anatomie; Coplin; McFarland; Beattie and Dixon; Adami's General and Special Pathologies; Krehl and Marchand, Handbuch der Allgemeinen Pathologie; Brooks' Pathology.

Osler's Text-book of Medicine; Osler's Modern Medicine; Albutt and Rolleston's System of Medicine; Grayson's Diseases of Throat, Nose and Ear.

## Text-Books.

*Obstetrics:* Hirst's Text-book of Obstetrics.

## Collateral Reading.

Norris' American Text-book of Obstetrics; Edgar's Obstetrics; Webster's Obstetrics; Williams' Obstetrics.

*Pharmacology:* Cushny's Text-book of Pharmacology and Therapeutics.

The United States Pharmacopœia; Wood's Therapeutics; Sollman's Pharmacology; Dixon's Pharmacology; Schmiedeberg's Pharmakologie; Meyer and Gottlieb's Die Experimentelle Pharmakologie als Grundlage der Arzneibehandlung.

*Applied Anatomy:* Davis' Applied Anatomy; Piersol's Anatomy, Practical Considerations.

Woolsey; Eisendrath; Taylor; Treves; Campbell; Deaver.

*Physical Diagnosis:* S. J. Gee, Auscultation and Percussion; Flint and Emerson, Manual of Auscultation and Percussion; Sahli and Potter, Diagnostic Methods.

*Physical Diagnosis:* R. Geigel, Leitfäden der Diagnostischen Akustik; Hirschfelder, Diseases of the Heart and Aorta; Tyson, Physical Diagnosis; Camac, Epoch-making Contributions to Medicine, Surgery and the Allied Sciences; Cabot, Physical Diagnosis.

*Nervous Diseases:* Oppenheim's Diseases of the Nervous System, translated by Alexander Bruce; Pott's Nervous and Mental Diseases; Pott's Electrotherapeutics.

Mill's Diseases of the Brain and Cranial Nerves, with a General Introduction on the Study and Treatment of Nervous Diseases; Dana's Text-book of Nervous Diseases; Church and Peterson's Nervous and Mental Diseases; Starr's Nervous Diseases, Organic and Functional.

## Text-Books.

*Gynecology*: Penrose's Text-book of Diseases of Women; Winter's Gynecological Diagnosis.

## Collateral Reading.

Kelly's Operative Gynecology; Hirst's Text-book of Gynecology; Ashton's Practice of Gynecology; Montgomery's Text-book of Gynecology.

*Pediatrics*: Holt; Rotch; Koplik; Carr; Ruhräh.

*Medical Jurisprudence*:

Reese's Medical Jurisprudence; Herold's Legal Medicine. The Law in its Relation to Physicians, by Taylor; Draper's Medical Jurisprudence.

*Dermatology*: Duhring's Cutaneous Medicine, Parts I and II; Stelwagon's Treatise; MacLeod's Handbook of the Pathology of the Skin.

*Ophthalmology*: de Schweinitz, Diseases of the Eye.

American Text-book of Diseases of the Eye, Ear, Nose and Throat, by de Schweinitz and Randall.

*Hygiene*: Bergey's Principles of Hygiene; Sedgwick's Hygiene and the Public Health; Flügge's *Grundriss der Hygiene*; Notter's Treatise on Hygiene; Abbott's Hygiene of Transmissible Diseases.

Chapin: Municipal Sanitation in the United States; Bashore's Rural Hygiene; Dunbar and Calvert; Principles of Sewage Disposal; Mason's Water Supply; Rubner, Grubers and Ficker, *Handbuch der Hygiene*; Rosenau's Disinfection and Disinfectants; Wiley's Foods and their Adulterations; McKenzie's Exercise in Education and Medicine.

## Collateral Reading.

## Text-Books.

*Physical Therapy:* Wide on Medical and Orthopædic Gymnastics; Graham's Treatise on Massage; McKenzie's Exercise in Education and Medicine.

*Medical Dictionary:* Gould, Dorland, Cattell or Stedman.

## **PART IV.**

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### **GRADUATE WORK.**

## GRADUATE WORK.

In addition to the usual accommodations afforded graduates of this and other regular medical schools to attend the laboratory and clinical work of the school, three special provisions for post-graduate work leading to degrees are open to applicants, viz.: a course of instruction in Public Hygiene leading to the degree Dr.P.H. (Doctor of Public Hygiene) for graduates in Medicine and the certificate C.S. (Certified Sanitarian), for those not holding the M.D. degree, and, under the rules of the Graduate School of the University of Pennsylvania, the election of certain branches in the School of Medicine in courses leading to the Ph.D. degree.

In addition, the special courses in Tropical Medicine are intended especially for post-graduates, and a limited number of post-graduate students may be accommodated in the work of the Phipps Institute.

### 1.—COURSES IN PUBLIC HYGIENE.

ALEXANDER C. ABBOTT, Dr.P.H., M.D., Sc.D., Pepper Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene.

WILLIAM EASBY, JR., C.E., Professor of Municipal Engineering.  
R. TAIT MCKENZIE, A.B., M.D., Professor of Physical Education and Director of the Department of Physical Education.

LOUIS A. KLEIN, V.M.D., Professor of Pharmacology and Veterinary Hygiene and Dean of the Veterinary School.

DAVID H. BERGEY, A.M., M.D., Assistant Professor of Bacteriology.

THOMAS NOLAN, Ph.B., M.S., A.M., Professor of Architectural Construction.

PHILIP P. CALVERT, Ph.D., Professor of Zoölogy.

NATHANIEL GILDERSLEEVE, M.D., Associate in Bacteriology.  
M. H. JACOBS, Ph.D., Instructor in Zoölogy.

WALTER S. CORNELL, B.S., M.D., Instructor in Osteology, University of Pennsylvania, Director of Medical Inspection in the Public Schools of Philadelphia.

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*Sanitary Engineering.*—Including a consideration of water supplies; Sewerage and sewage disposal; the disposal of municipal refuse and street cleaning.

*Sanitary Engineering of Buildings.*—Including the principles and practices involved in their heating and ventilation; the various methods of draining and plumbing.

*Inspection of Meat, Milk and Other Animal Products.*—Comprehending a discussion of the general question of meat inspection of the diseases of food-producing animals dangerous to man; of milk, particularly of the proper methods of production, preservation and delivering; and of the approved methods for the preservation of all such products.

*Practical Methods Used in Sanitary Work;* i. e., the practical application of chemical, physical and biological methods to the study of the air, water, soil, food, raiment; the methods for the disposal of refuse; the characteristics of offensive and dangerous trades.

*Practical Bacteriology.*—Covering the use of apparatus, the methods of cultivating and isolating bacteria; the study of special types of bacteria, particularly those concerned in the causation of disease; a study of immunity, protective vaccinations and the blood reactions attendant thereto; a study of disinfectants and methods of practical disinfection; the bacteriological analysis of air, water, soil, foods, etc.

*Protozoölogy.*—This course includes a general introduction to the structure, physiology, life-histories and classification of the protozoa, with especial reference to those forms which cause disease in man and the lower animals. Attention is paid to the technique of protozoan investigation, the special methods of cultivating, fixing, staining and sectioning the protozoa being considered. An attempt is made in the lectures to point out the most promising fields for future investigation, and facilities are offered (in the laboratory) to those desiring them, to pursue original lines of research.

*Arthropods and Disease.*—Characters and structures of the arthropods and their subdivisions, with special attention to those forms of arachnids and of insects which as parasites or otherwise attack man and mammals and which carry, or may serve as carriers of disease, or which possess poisonous secretions.

*Medical Inspection of Schools.*—This instruction is given in a course of lectures on the subject of medical inspection of school children, and the segregation and care of the mentally deficient pupil found in the schools.

*Personal Hygiene*.—Covering the topics of anthropometry, the use of exercise for correction of defects; the value of exercise in the maintenance of physiological equilibrium.

*Vital Statistics*.—Statistical methods and the results, with special reference to the population of cities.

*Sanitary Legislation*.—Comprising a study of the Federal, State and Municipal laws and regulations for safeguarding the public health.

*General Hygiene*.—Designed to co-ordinate the foregoing topics and to indicate the relation of each and all to the general question of preventive medicine.

This course covers one academic year.

At the termination of the course both theoretical and practical examinations will be held and on all Doctors of Medicine demonstrating fitness, a degree, Dr.P.H., designating the holder as "Doctor of Public Hygiene," will be conferred. To those participants in such subjects of the course as are not strictly medical and who do not hold the degree of Doctor of Medicine, a certificate designating the holder as "Certified Sanitarian" will be awarded.

Only persons holding the degree of Doctor of Medicine are eligible to the full course. The fee for the course, including the diploma, is \$150.00. For circular of particulars apply to the

Director of the Laboratory of Hygiene,

University of Pennsylvania.

## **2.—COURSES IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF PENNSYLVANIA.**

Certain branches of instruction in the Medical School have been incorporated in the Graduate School of the University by the Trustees, and may be elected in appropriate groups by eligible individuals for work for the Master's Degree, or that of Ph.D. The possession of a Baccalaureate Degree is required for admission, and the conditions are subject to the rules of the Graduate School of the University of Pennsylvania. For information address Dean of Graduate School of University of Pennsylvania, Philadelphia.

Majors—Anatomy; Physiology; Physiological Chemistry;  
Bacteriology; Pathology; Research Medicine;  
Pharmacology.

## Professor PIERSOL.

1. Anatomy. Taken as a major only by individuals with satisfactory preparation in Human Anatomy or General Anatomy, and offered only for research work upon such anatomical subjects as may be assigned by the Professor of Anatomy after consultation with each student. Hours to be assigned in each case.

General Human Anatomy may be taken as a minor by students approved by the Professor of Anatomy. Hours for lecture and dissection exercises to follow the class work scheduled for the students of the School of Medicine.

Special portions of Human Anatomy as may harmonize with other branches of study (as in the anatomy of the nervous system for students of psychology) may be selected as minors. Hours of instruction to follow the schedule for such subjects in the School of Medicine.

## Professor REICHERT.

2. Physiology. Taken as a major only by individuals with satisfactory preparation and offered only for research work upon such physiological topics as may be assigned by the Professor of Physiology after consultation with each student. Hours to be assigned in each case.

Taken as a minor only by students with approved preparation, in appropriate arrangement with other selected branches. Hours of lecture and laboratory exercises as scheduled in the School of Medicine.

## Professor TAYLOR.

3. Physiological Chemistry. Taken as a major only by students with approved preparation in General Chemistry and elementary Physiological Chemistry, and offered only for research study upon such topics as may be assigned by the Professor of Physiological Chemistry after consultation with the individual student. Hours to be assigned in each case.

Taken as a minor only by students with approved preparation in General Chemistry, in appropriate arrangement with other selected branches.

## Professor ABBOTT.

4. Bacteriology. Taken as a major only by students approved by the Professor of Hygiene and Bacteriology for work in General Bacteriology or for work with the pathogenic organisms. Hours of instruction and laboratory work assigned by the Professor in charge for each individual accepted.

Taken as a minor in connection with other appropriate subjects selected. Hours of instruction and laboratory exercise as scheduled in the School of Medicine.

## Professor SMITH.

5. Pathology. General Pathology or special divisions of appropriate dignity may be selected as major subjects only by students with approved preparation; the work in any subject to be conducted with the instruction in the School of Medicine as a basis and advancing into individual research in topics assigned by the Professor of Pathology after consultation with the individual student. Hours of instruction and laboratory work assigned in each case.

As a minor any branch of Pathology may be selected by students with approved preparation, to follow the schedule of lecture and laboratory instruction employed in the School of Medicine.

Courses of lecture and laboratory instruction at present in operation include, along with the usual subjects, protozoan infections and metazoan parasitology, immunology and serum diagnosis.

## Professor C. W. BURR.

6. Mental Diseases. This course may be taken as a minor by approved students, the work following the scheduled class-work in the School of Medicine. Additional opportunities for diagnosis and observation in the wards of the Insane Department of the Philadelphia Hospital may be granted to special individuals.

## Professor W. G. SPILLER.

7. Neuropathology. Taken as a minor only by students with approved preparation in Pathology and who have had some instruction in the anatomy of the nervous system. This

course is similar to that offered in the School of Medicine, although individuals who are sufficiently advanced may arrange for additional work.

Professor R. M. PEARCE.

8. Research Medicine. This subject is open only as a major to students with approved preparation, for research work in those problems of scientific medicine to which can be applied laboratory methods.

Professor A. N. RICHARDS.

9. Pharmacology. Work may be elected as either major or minor in this branch, subject in matter of instruction and hours to the requirements of the student with approval of the professor in charge.

**3.—COURSES IN TROPICAL MEDICINE.**

Professor A. C. ABBOTT, *Bacteriology, Medical Climatology and Geography, Hygiene of the Tropics and of Ships.*

Dr. M. H. JACOBS ..... *Protozoölogy.*

Dr. P. P. CALVERT ..... *Entomology.*

Professor ALLEN J. SMITH ..... *Helminthology and General Medical Zoölogy, and Pathology; Director of the Courses.*

Dr. WILLIAM PEPPER ..... *Tropical Medicine.*

Professor G. E. DE SCHWEINITZ .. *Ophthalmology.*

Professor M. B. HARTZELL ..... *Dermatology.*

Dr. G. P. MÜLLER ..... *Surgical Applications.*

Dr. DAMASO RIVAS ..... *Assistant Director of the Courses.*

The University of Pennsylvania in organizing courses of instruction in Tropical Medicine has had in mind not only the need for special opportunity in these lines for practitioners of medicine in the semi-tropical surroundings of our Southern States and outlying territories, but in view of the rapid extension of American commerce into tropical regions realizes the existing and increasing need for medical men with suitable preparation in the extending spheres of American influence in tropical America and the far East. The com-

paratively large number of students from Central and South America also has appealed to the authorities as a reason for an attempt to more fully deal with the conditions which such a class of students is certain to meet in their homes when engaged in practice.

For these reasons a course of instruction, which it is hoped will eventually develop into the fullest realization of the desires of the University authorities, has been organized. The fundamental features are particularly dwelt upon as the really essential parts of such a special course of inspection. Philadelphia is not so situated geographically and not possessed of such commercial relations that there may be predicted at all times such number and type of clinical subjects as must be desirable for the full illustration of the various affections to be dealt with; yet there are available, now in one, now in another hospital of the city, which has permitted the University to make use of the material for teaching purposes, a very fair number of cases of the more common and important affections dealt with, exclusive of those which by law are not permitted entrance to the city from the ship-quarantine guarding the port. In all other divisions of the course than the exhibition of clinical cases it is hoped that ultimate development will leave little to be seriously criticised and much in all of the different lines of instruction which will be found commendable.

It has been determined to offer a course of study extending over a period of fifteen weeks and embracing not less than ten units of work,\* at the completion of which period a certificate of attendance is granted, signed by the Provost and Vice-Provost of the University and by the Dean of the Medical School and the Director of the Courses in Tropical Medicine, to all those matriculates who have been in full attendance and who satisfactorily pass examinations in the various branches scheduled for the Courses in Tropical Medicine. To such persons as may have elected individual branches in the course and who satisfy similar requirements for the branch or branches attended, a certificate will be granted for the subject or subjects completed, signed by the Director of the Courses in Tropical Medicine and by the Instructor in the subject in question.

These courses are open to any reputable graduate in Medicine and to students of Medicine who may elect them. The requisite ten units for the certificate may be divided by medical students

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\* A unit is constituted by at least two hours of lecture or recitation work each week for the period of fifteen weeks; or by not less than four hours each week of laboratory work, ward work or clinical lectures.

throughout their period of Medical study, the order of selection to be prescribed by the Dean of the School of Medicine and the Director of the Courses in Tropical Medicine in consultation with the student.

The fee for the full course is \$150.00.

Graduates of this school or students in course are admitted at half rate. Fee for individual branches will be given upon application; but will be based upon the rule of not less than \$15.00 for each unit.

Subject.	No. of Units Allotted.	No. Hrs. Systematic Lectures.	No. Hrs. Clin. Lect. or Lab.Wk	Lecturer.
Med. Climatology and Geography ..	0.5	15	—	Abbott
Hygiene of Tropics and of Ships ....	2.0	30	60	Pepper
Tropical Medicine ...	0.5	8	15	Hartzell
Skin Diseases of Tropics .....	0.5	7	15	deSchweinitz
Eye Diseases of Tropics .....	1.0	15	30	Jacobs
Protozoölogy .....	1.0	15	—	Calvert
Arthropods and Disease .....	1.0	30	30	Smith and Rivas
Helminthology and Gen. Med. Zoölogy.	1.0	15	30	Smith and Rivas
Pathology of Tropical Diseases .....	2.0	30	60	Smith and Rivas
Bacteriology of Tropical Diseases .....	1.0	—	60	Abbott
Surgery of Tropical Diseases .....	0.5	7	15	Müller

For further information, address Director of Courses in Tropical Medicine, School of Medicine, University of Pennsylvania.

**4.—THE DEPARTMENT OF RESEARCH MEDICINE.**

RICHARD M. PEARCE, M.D. .... *Professor of Research Medicine.*  
J. HAROLD AUSTIN, M.D. .... *Associate in Research Medicine.*  
O. H. PERRY PEPPER, M.D. .... *Associate in Research Medicine.*  
MAX M. PEET, M.D. .... ROBERT ROBINSON PORTER *Fellow in Research Medicine.*

This department, established in 1910 by specific endowment, has for its object the investigation of problems in clinical medicine by means of the fundamental medical sciences. It is equipped in such a way that the methods of chemistry, physiology, pathology, bacteriology and pharmacology may be applied to any clinical problem, with special provisions for distinctly experimental investigation, as well as for observation on patients in the wards of the University Hospital. Opportunity for investigation will be given to instructors in the clinical departments of the Medical School and to properly prepared practitioners and students. Although essentially a research department, the department will give a limited amount of elective undergraduate instruction in special subjects.

**5.—HENRY PHIPPS INSTITUTE.**

The Henry Phipps Institute for the Study, Prevention and Treatment of Tuberculosis is intended for the threefold object of research in tuberculosis, of instruction, and as a benefaction to the needy afflicted by tuberculosis. Its research and other activities are in charge of a special directorate (v. p. 101); and under appropriate regulations graduate work in its special lines of operation is afforded properly prepared students of this disease. Its possibilities will be decidedly augmented after the completion of the new building intended for it and now in course of erection. Laboratory facilities, clinical opportunities and study and practice in sociology among the tuberculous are offered. Information may be had by addressing either the Dean of the School of Medicine or the Executive Director of Phipps Institute.

**6.—WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE.**

Under appropriate regulations and under approval of the Director of the Laboratory, the facilities of this department (v. p. 99) are extended to graduate students.

## **PART V.**

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### **EQUIPMENT AND FACILITIES.**

## BUILDINGS AND EQUIPMENT.

### LABORATORIES OF PATHOLOGY, PHYSIOLOGY AND PHARMACOLOGY.

The LABORATORIES OF PATHOLOGY, PHYSIOLOGY and PHARMACOLOGY were formally opened June, 1904. This building is unsurpassed in facilities and equipment for graduate and undergraduate work. The building is two stories in height, above a high basement, and measures 340 feet front by nearly 200 feet in depth. The long front faces north, securing a maximum amount of light for laboratory purposes. All along the front are arranged small rooms for research, rooms for professors and their assistants, libraries, etc., these opening into a private corridor so that those employed in these rooms may be free from interruption by persons passing through the main halls. Perfect lighting of all the laboratories has been obtained through the front or through large courts, which separate the two main parallel groups of rooms.

In the basement of the building the entire north front is occupied by the research laboratories of the department of physiological chemistry; the west wing to the museum of applied anatomy, the laboratories of operative surgery, bandaging and operative obstetrics. In the southern portion are various rooms for prosection and anatomical and pathological preparation; and the large laboratory of pharmacy.

The first floor of the building is devoted to physiology and pharmacology and to the laboratories of research medicine. The portion assigned to the first consists of laboratories for practical instruction, for general research work, for subsection teaching, rooms for the professor and assistants, etc. The section for pharmacology consists of a large general laboratory for teaching practical pharmacology, rooms for original research, etc. An equivalent portion of the southern part of this floor is given over to the laboratories of research medicine. The second floor is devoted mainly to pathology, the entire north front being given over to laboratories for advanced students in pathology, professors' rooms, administrative offices and to the special research and assistants' rooms. The wings accommodate the laboratory of experimental pathology, the museum, the demonstration-rooms and the laboratory of comparative pathology and tropical medicine. The front of the laboratory of normal and pathological histology consists almost entirely of glass and looks north into a spacious court. Another section of this floor, also looking into the court, is subdivided into smaller laboratories for instruction in neuropathology and surgical pathology, and in osteology.

Besides numerous laboratories, research-rooms, etc., there are four lecture-rooms in the building, two of these being demonstration rooms with a seating capacity of 185; the others being lecture-rooms with a seating capacity of 400. The building is entirely fireproof, of the most modern construction, supplied with power, electric light, and many kinds of accessories for promoting the teaching and research work.

#### **LABORATORIES OF CHEMISTRY AND ANATOMY.**

The CHEMICAL LABORATORIES occupy the first, second and third floors of the Robert Hare Laboratory building; on the second floor is the laboratory of general chemistry, and on the third floor that of physiological chemistry. In addition to the main rooms, there are smaller rooms, provided with an adequate number of balances for quantitative work, and special rooms set apart for research.

The ANATOMICAL LABORATORY is at the top of the building and is 140 feet in length by 40 feet in width. It is lighted by windows on all sides, and by skylights. The most perfect ventilation is thus secured. There are numerous washstands, with hot and cold water, and private closets for the use of each student. Cleanliness is rigidly enforced. The cadavers furnished the dissecting-room are preserved by refrigeration. Dissection is legalized in Pennsylvania.

#### **LABORATORY OF HYGIENE.**

ALEXANDER C. ABBOTT, M.D., *Director.*

The LABORATORY OF HYGIENE was formally opened on February 22, 1892. The building was the gift of the late HENRY CHARLES LEA, of Philadelphia, and the equipment was provided through the munificence of the late HENRY C. GIBSON, of Philadelphia. The building is devoted to graduate and undergraduate work in bacteriology, hygiene and preventive medicine. The student laboratory is a commodious, well-lighted and heated room, with a seating capacity for eighty-three students. Each student is supplied with an individual microscope, and with such apparatus as is necessary to conduct elementary studies in Bacteriology.

#### **NEW CLINICAL LABORATORY.**

Several years ago an extension was made to the University Hospital to accommodate the medical dispensaries, medical amphitheatre and clinical conference room, and on the top floor two large laboratories for the teaching of clinical pathology and for the routine laboratory investigation of the hospital cases. The larger room is equipped with desks for the use of the fourth-year students, giving

accommodations for 150 men. Each student of the fourth-year class is assigned a desk and is supplied with an outfit including all the ordinary apparatus required in the examination of blood, urine, stomach contents and other secretions or excretions. He is required to supply himself with a microscope so that he will be enabled to conduct all clinical examinations on cases assigned to him in the hospital wards or elsewhere.

Adjoining the fourth-year laboratory is a smaller room equipped in a similar manner and capable of accommodating fifty students each with a working desk. Members of the third-year class are here instructed in clinical laboratory methods. The class is divided into three sections, each of which is assigned one day per week throughout the year. The course covers completely the important laboratory methods of investigation of blood, urine, stomach contents, pathological exudates, secretions, excretions, etc.

A third room accommodates the Staff Laboratory, where the Pathological Resident of the hospital under the direction of an Instructor, carries on all the preliminary examinations of materials sent from the wards, makes all blood examinations, Widal tests, etc. Subsequent examinations are made by students of the fourth-year class to whom the cases in the wards are assigned under suitable direction.

#### **WISTAR INSTITUTE OF ANATOMY AND BIOLOGY.**

MILTON J. GREENMAN, PH.B., M.D., Sc.D., *Director.*

HENRY H. DONALDSON, PH.D., Sc.D., *Professor of Neurology.*

SHINKISHI HATIA, PH.D., *Associate in Neurology.*

J. MACPHERSON STOTSENBURG, M.D., *Associate in Anatomy.*

HELEN D. KING, PH.D., *Associate in Anatomy.*

EDWARD B. MEIGS, M.D., *Fellow in Physiology.*

The WISTAR INSTITUTE, incorporated in 1892 by the University of Pennsylvania and General Isaac J. Wistar, is the first American University Institute devoted to advanced study and research in anatomy and biology.

Through the munificence of the late General Isaac J. Wistar the Institute was established and endowed not only for the advancement of research in anatomy, but also for the preservation and increase of the anatomical museum originally known as the Wistar or Wistar and Horner Museum. The original museum founded in 1808 by Professor Casper Wistar was used as a teaching museum for students of medicine in the University of Pennsylvania. Its development along broader lines, since the organization of the Insti-

tute, has greatly increased its scientific value both to the medical students of the University and to biological students throughout the country. It has now become the depository for research materials which are open, under suitable regulations, to the use of capable investigators from all Institutions, and through its Advisory Board it has established itself as a central anatomical institute.

The Museum is open to the public as well as to students daily, except Sundays and Holidays, from 9 A. M. to 4 P. M., Saturdays from 9 A. M. to 12 M.

Well equipped laboratories and a biological library adjoin the museum and every facility is provided here for the work of investigators. The chief resources of the Institute are, at the present time, directed to researches in Comparative Neurology, Comparative Embryology, Biometry and Biological Chemistry. No undergraduate teaching is done in the Institute, but arrangements can be made with the Director whereby advanced students or graduates in medicine may be afforded the facilities for research offered by the Wistar Institute.

The Institute publishes the five principal, independent anatomical journals of the United States, namely: *Journal of Morphology*, *The Journal of Comparative Neurology*, *The American Journal of Anatomy*, *The Anatomical Record*, and *The Journal of Experimental Zoölogy*. In these journals appears a large portion of the anatomical research work done in this country. In addition the Institute also publishes a series known as *Memoirs of the Wistar Institute*, in which appear such monographs as are too extensive to be published in the journals.

#### **WILLIAM PEPPER CLINICAL LABORATORY.**

HERBERT FOX, M.D., *Director.*

*Associates.*

SAMUEL S. KNEASS, M.D.,	JOHN W. HUNTER, M.D.,
DANIEL J. McCARTHY, M.D.,	JOHN L. LAIRD, M.D.,
THOMAS A. COPE, M.D.,	P. G. SKILLERN, JR., M.D.

*Volunteer Associates.*

JOSEPH SAILER, M.D.,	O. H. PERRY PEPPER, M.D.,
BENJAMIN A. THOMAS, M.D.,	ROBERT H. IVY, M.D.,
WILLIAM PEPPER, M.D.,	A. H. HOPKINS, M.D.,
G. W. NORRIS, M.D.,	R. G. TORREY, M.D.

WOODWARD *Fellow in Physiological Chemistry.*

DR. G. J. SAXON.

The WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE, erected through the generosity of the late Dr. William Pepper as a memorial to his father, adjoins the University Hospital. The purposes of the Laboratory are: to promote the interests of the patients by providing facilities for the prosecution of minute clinical studies and original researches; and to advance the interests of science by the publication of the results of such work. No instruction in the Laboratory is given to undergraduates.

The Associates and Volunteer Associates of the Laboratory are appointed for the purpose of carrying out certain lines of investigation for which they have special preparation. The Laboratory does not solicit post-graduate teaching, but has received a limited number of post-graduate students from time to time for the purpose of training them to carry on investigation.

The publications of the Laboratory are issued in the form of contributions, which are the collected reprints of articles issued from the Laboratory and published in various medical journals. One or two numbers, containing from fifteen to twenty or more separate articles, appear each year. A limited number of these may be had by interested persons on application.

The Woodward Fellowship in Physiological Chemistry was founded by George Woodward, M.D., to be filled by election by the Board of Managers of the Hospital of the University of Pennsylvania upon nomination by the Director. The incumbent shall give his full time to work in Physiological Chemistry at the Laboratory and publish only from it, under the Laboratory imprint.

#### THE UNIVERSITY HOSPITAL.

ROBERT E. HASTINGS, <i>Chairman</i> .....	} <i>Executive Committee of Board of Managers.</i>
GEORGE H. McFADDEN .....	
JOHN SAILER .....	
CHARLES W. DULLES, M.D. .....	
HENRY S. GROVE .....	
J. WILLIAM WHITE, M.D. .....	
THOMAS G. ASHTON, M.D. .....	<i>Secretary.</i>

The UNIVERSITY HOSPITAL is situated on the University Campus. It is one of the most important agents in the training of the students, an invaluable adjunct to the School of Medicine, and, together with the Out-Patient Department, furnishes ample provision for the teaching of clinical medicine according to the most approved methods. With accommodations for 391 patients, it also affords excellent

facilities for bedside instruction. Members of the faculty are members of the Hospital Staff.

Six positions as resident physicians in the University Hospital are awarded annually to six members of the Graduating Class of the School of Medicine, selected from the twenty-five full time members of the class who have the highest general average at the end of the third year of the course and from a like percentage or fraction of the men admitted to advanced standing ranked on their third-year average.

The MATERNITY PAVILION, with a capacity of 50 beds, comprises a main building, to which the patients are admitted two weeks before delivery, two wings containing delivery rooms, and the ANNA DIKE SCOTT Amphitheatre. This department is under the charge of the Professor of Obstetrics. Under the supervision of the clinical staff, the students assist in cases of labor and make daily visits, during the puerperium, to the mother and child.

#### THE HENRY PHIPPS INSTITUTE.

##### UNIVERSITY COMMITTEE ON PHIPPS INSTITUTE.

Provost E. F. SMITH,	Mr. THOMAS ROBINS,
Dr. J. WILLIAM WHITE,	Dr. CHARLES J. HATFIELD,
Mr. ARTHUR L. CHURCH,	Dr. ALFRED STENGEL,
Mr. R. A. F. PENROSE, JR.,	Dr. A. C. ABBOTT,
Mr. GEORGE E. GORDON,	Dr. ALLEN J. SMITH.

#### ADVISORY COUNCIL.

Dr. SAMUEL G. DIXON, *Commissioner of Health of Pennsylvania, ex-officio.*

Dr. JOSEPH S. NEFF, *Director, Department Public Health and Charities, Philadelphia, ex-officio.*

Mr. WILLIAM H. BALDWIN, *Washington,*

Dr. HERMANN M. BIGGS, *New York,*

Dr. LAWRASON BROWN, *Saranac Lake,*

Dr. HENRY BAIRD FAVILL, *Chicago,*

Dr. SIMON FLEXNER, *New York,*

Dr. SAMUEL McCUNE LINDSAY, *New York,*

Dr. JAMES ALEXANDER MILLER, *New York,*

Dr. JOSEPH H. PRATT, *Boston,*

Dr. THEOBALD SMITH, *Boston,*

Dr. WILLIAM H. WELCH, *Baltimore,*

Dr. H. GIDEON WELLS, *Chicago.*

## CONSULTING STAFF.

Dr. ALFRED STENGEL, *Consulting Physician*,  
 Dr. EDWARD MARTIN, *Consulting Surgeon*,  
 Dr. T. B. HOLLOWAY, *Consulting Ophthalmologist*,  
 Dr. D. J. McCARTHY, *Consulting Neurologist*,  
 Dr. J. B. CARNETT, *Consulting Surgeon*.

## STAFF.

Dr. CHARLES J. HATFIELD *Executive Director*.

*Clinical and Sociological Department.*

Dr. H. R. M. LANDIS, *Director*.

*Instructors.*

Dr. FRANK A. CRAIG,	Dr. C. M. MONTGOMERY,
Dr. JOHN M. CRUICE,	Dr. J. T. ULLOM.

*Clinical Assistants.*

Dr. ISADORE KAUFMAN,	Dr. MAURICE M. JACOB,
Dr. J. D. BLACKWOOD,	Dr. Jos. BARDY.

*Laryngologists.*

Dr. GEORGE FETTEROLF,	Dr. I. W. BROWN,
	Dr. HENRY J. OFF.

*Social Workers.*

Miss LUCINDA N. STRINGER,	Miss MARGARET B. WISE,
Miss CECILIA FLICK,	Miss JENNIE A. FERRIS.

*Research Assistant in Sociology.*

Miss JANICE S. REED.

*Superintendent of Hospital.*

Miss ANNA K. SUTTON.

*Pathological Department.*

Dr. PAUL A. LEWIS, *Director*,  
 Dr. RUSSELL RICHARDSON, *Research Assistant*,  
 Mr. ROBERT B. KRAUSS, *Research Assistant*,  
 Mr. ARTHUR MARGOT, *Research Assistant*.

The Henry Phipps Institute for the study, treatment and prevention of tuberculosis was established in 1903 by Mr. Henry Phipps, of

New York, at Third and Pine Streets, Philadelphia, in the building now occupied as temporary quarters. The situation was chosen as being in a section of the city in which tuberculosis was most prevalent, and was made possible by a special law permitting the establishment of the Hospital within the city limits.

In February, 1910, Mr. Phipps transferred the Institute to the University of Pennsylvania, having previously engaged to erect an appropriate permanent building for its accommodation upon grounds gradually acquired with this in view. The new building, located at Seventh and Lombard Streets, will be completed about December 1. By this generous gift to the University this becomes the first fully organized and equipped institution of the kind with University connection. An entire reorganization of the plan of work has been undertaken by the University. This contemplates a broadening of its efforts and division of the work into distinct fields of activity, to be represented by two corresponding departments, the Laboratory or Research Department, and the Clinical and Sociological Department, each under its special director. An Advisory Council of twelve members has been selected, composed of the most distinguished men of the country in the lines of work carried on by this Institute, who will visit the Institution at least once each year.

On account of its connection with the University, the Institute will offer facilities for study to the students of the University of Pennsylvania, especially those of the Medical School. Both by visits to the Institution and through the publication of the results of its investigations and research, the Institute will prove valuable both to students and physicians throughout the country interested in this special work.

#### **LIBRARY FACILITIES.**

The basis of the Medical Section of the University Library is formed by the Stillé Collection, presented by the late Alfred J. Stillé, to which additions have been made from the William Pepper Medical Foundation established by the late Dr. William Pepper. In addition to purchases, the Medical Section has grown considerably through gifts presented by a number of medical publishers, more particularly Messrs. W. B. Saunders, Lea & Febiger, the J. B. Lippincott Company and P. Blakiston's Son & Co. From most of these are received regularly the new publications issued by them. In addition to these, the University subscribes to about 100 medical periodicals, which represent a choice selection of the leading medical

periodicals of this country and Europe. Through special funds the sets of all the more important periodicals and publications of medical societies have been completed.

The PEPPER MEDICAL ALCOVE contains sets of the more important medical periodicals, general reference works covering the various departments of medicine and surgery, text-books, serial publications and all the more important new medical books received at the University.

**DEPARTMENTAL LIBRARIES.**—A Departmental Library in Physiology has been established, in which are on file all of the important current periodicals on general and special Physiology. Such libraries are accessible to the students under the same rules or regulations as are in effect in the General Library.

**LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.**—In addition to the Medical Section of the University Library, students have access to the Library of the College of Physicians, the second largest medical library in the United States.

## **PART VI.**

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### **GENERAL INFORMATION.**

## GENERAL INFORMATION.

### ARRANGEMENT OF SESSION.

The academic year consists of one session, beginning on the last Friday in September, and ending at Commencement on the third Wednesday in June.

### TUITION FEES AND EXPENSES.

Under no circumstances are any changes made in the established fees. The only free scholarships granted are those under the regulations hereinafter referred to.

It is expected of every student, either before or by the time of entrance to the second-year class, that he will provide for himself, either by purchase, rental or otherwise, a microscope of a grade suitable for general medical work.

#### *First Year.*

Matriculation fee .....	\$5 00
For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year .....	\$200 00
Use of dissecting material ( <i>three parts</i> ) .....	\$1.50 a part.
Gymnasium and Houston Club fee .....	\$10 00

#### *Second Year.*

For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year .....	\$200 00
Use of dissecting material ( <i>one part</i> ) .....	\$1.50 a part.
Gymnasium and Houston Club fee .....	\$10 00

#### *Third Year.*

For general tuition ticket, admitting to all the lectures and practical courses assigned to this year .....	\$200 00
Gymnasium and Houston Club fee .....	\$10 00

#### *Fourth Year.*

For general tuition ticket, admitting to all the lectures and the practical courses assigned to this year (no graduation fee) .....	\$200 00
Use of material for operations in surgery ( <i>one part</i> ) ..	\$1.50 a part.
Gymnasium and Houston Club fee .....	\$10 00

**FEES FOR SPECIAL COURSES OF THE GENERAL CURRICULUM.**

(*Students taking special or partial courses, if not already matriculated, or if not graduates of the School, are required to pay the matriculation fee in addition to the fees named below.*)

For any single course of lectures .....	\$20 00
For practical course in the Chemical Laboratory .....	25 00
For the course in Practical Gynecology of the fourth year ..	25 00
For any one of the remaining practical courses .....	15 00

For practical courses in special classes a minimum fee of \$25.00 will be charged, this fee increasing in proportion to the material required and special attention demanded in instruction.

Graduates in Medicine of this University are admitted to the courses free of charge, but they are required to pay for any laboratory material which they may use.

*Fees for Courses in Public Hygiene and in Tropical Medicine.*

General fee for the course in Public Hygiene, including

diploma .....	\$150 00
For single branch of this course .....	25 00
Regular deposit to cover breakage, etc., for entire course, or single branch .....	10 00
General fee for course in Tropical Medicine .....	150 00
Fee for single branch of this course from .....	\$15 00 upward
Fee for single graduate course in Phipps Institute from .....	50 00 upward

**RULES IN RELATION TO FEES.**

All payments should be made to W. O. Miller, Bursar, Room 102, College Hall.

A matriculation fee of \$5.00 must be paid by all new students in the department, whether previously registered in another department or not.

Every student shall upon entering the University make a deposit of \$10.00 to cover loss, damage, or breakage of University property, library fines, or any charge not paid by the student in some other way. A student whose deposit is by charges against it reduced to \$2.50 or less shall be required to pay a sum sufficient to restore the deposit to its original amount. No deposit or balance remaining on a deposit shall be finally repaid to a student until he shall have been graduated or shall have formally withdrawn from the University.

A student who repeats the studies of the year will be required to pay the full tuition fee.

**ALLOWANCES IN CASE OF WITHDRAWAL, ETC.**

A student who leaves the University within thirty days after the beginning of either the first or second term, and who shall have paid the full term's tuition fees may receive a return of one-half of the tuition fees paid, but in no case shall the matriculation fee be returned.

**EXAMINATIONS.**

*First Year.*—The mid-year examination in Anatomy (including Osteology, Syndesmology, Myology, and such other subjects as may have been covered by the lectures on Anatomy before February 1), and examination in Physiological Chemistry are held about February 1.

Final examinations at end of year: Anatomy and Bacteriology.

*Second Year.*—Examinations in Anatomy, in Physiology, Pathology and Materia Medica will be held about February 1.

Final examinations at the end of the year in Physiology, Applied Anatomy, Pathology, Pharmacology, Toxicology and Physical Diagnosis.

*Third Year.*—Examination in Ophthalmology will be held about February 1.

Final examinations at end of year: Medicine, Surgery, Obstetrics, Therapeutics and Pathology.

*Fourth Year.*—Examination in Hygiene will be held about February 1.

Final examinations at end of year: Medicine, Surgery, Obstetrics, Gynecology and Dermatology. The examinations include questions on Diseases of the Ear, Children's Diseases and Neurology, from lists furnished by the professors of those branches.

**GRADUATION.**

At the end of the fourth year a student who has passed all the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following provisions:

1. He must be 21 years of age, and of good moral character.
2. He must have passed satisfactory examinations in all of the required branches of the curriculum, must have attended the practical instruction in all departments, and his last year of instruction must have been at this school.
3. He must have attended at least six cases of Obstetrics.
4. He must be present at Commencement, unless excused by the Dean of the Faculty.

**SCHOLARSHIPS.**

A competitive examination of candidates to fill three free scholarships is held annually. (In 1913, on Monday, September 22, at 10 A. M. in the New Medical Laboratories.) Each candidate will be required:

*First.* To satisfy the entrance requirements as stated on pages 26-32.

*Second.* To furnish satisfactory evidence in writing, from three reputable persons, that he is without means to defray the expenses of a medical education.

*Third.* To write a brief autobiography of about 300 words in length, which will serve as a test of his qualifications in orthography and grammar. This is to be written on Monday, September 22, at 10 A. M.

*Fourth.* To undergo examinations in the following subjects:\*

i. Any two of the four languages:

- (a) Latin (third book of Horace's *Odes*); after the year 1913, second and fourth books of Horace's *Odes*.
- (b) Greek (first four books of the *Iliad*). The examination will include prosody, syntax and Homeric dialect.
- (c) French.—Elementary French, including grammar, prose composition (Joynes' *Minimum French Grammar and Reader*), and reading at sight in books of the grade of the following:

Francisque Sarcey, *Le Siège de Paris*.

Beaumarchais, *Le Barbier de Séville*.

Anatole France, *Le Crime de Sylvestre Bonnard*.

- (d) German.—Elementary German, including Learned's *German Grammar*, Wesselhoeft's or Harris' *Prose Composition*, and reading at sight in books of the grade of the following:

Heine's *Harzreise*.

Eichendorff's *Aus dem Leben eines Taugenichts*.

Wildenbruch's *Das edle Blut*.

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\* A percentage of not less than 50 must be obtained in each one of the subjects in which a competitor undergoes examination, and an average percentage of at least 70 must be obtained on the whole examination that a competitor may have his name placed upon the eligible list. The appointments will be made from this eligible list.

2. Physics. (As in Gage's Principles of Physics—Goodspeed's Revision, Crew's General Physics, or Duff's Text-book of Physics.)
3. Plane Geometry. To be omitted after 1913.

*Fifth.* To pay an examination fee of \$5.00, which is not returned, but is accepted as the matriculation fee in case the candidate is successful.

The applications of candidates who propose presenting themselves for examination, together with the certificates demanded by the second requirement of the competition, must be in the hands of the Dean *before September 10*. This requirement having been complied with, candidates will appear without further notice at the time stated for examinations.

In 1914 the candidate must undergo examinations in the following subjects:

1. Any two of the four languages (as in 1913) :
2. Any two of the three sciences:
  - (a) Physics (as in 1913).
  - (b) Chemistry (General; as in Richter's Inorganic Chemistry or its equivalent. Qualitative Analysis, including bases and acids with separations, as in Medicus Qualitative Analysis).
  - (c) Zoölogy or Biology (Zoölogy as in Galloway's Text-book of Zoölogy or Hegner's College Biology. Biology as in Needham's General Biology.)

#### **PRIZES TO BE AWARDED, JUNE, 1913.**

*NOTE.—Theses and Reports in competition for Prizes must be presented to the Dean on or before May 1. Prizes will not be awarded unless the work submitted reaches a high standard of excellence.*

THE ALUMNI MEDAL and a prize of \$50.00 is offered by the Society of the Alumni of the School of Medicine of the University, to the member of the Graduating Class who attains the highest general average in examinations. (Only those members of the Graduating Class who have taken the last three years of the course in Medicine at this University are eligible.)

THE DR. SPENCER MORRIS PRIZE.—The annual income, derived from the investment of Ten Thousand Dollars, will be awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine.

The FREDERICK A. PACKARD PRIZE of One Hundred Dollars is offered by a friend of the University to the member of the Graduating Class who has proven himself to be the most proficient in the course in Clinical Medicine.

The Professor of Obstetrics offers a Prize of an obstetrical forceps to the member of the Graduating Class who furnishes the best report of a case of Obstetrics occurring in the University Maternity Hospital.

DR. A. O. J. KELLY PRIZE FUND.—Founded March 26, 1912, by contributions from friends of Dr. A. O. J. Kelly, deceased. The Kelly Prize will be given to a member of the Fourth Year Medical Class who has made an especially meritorious report of some clinical observation in his regular University work.

#### APPOINTMENTS TO HOSPITAL.

The school strongly advises each graduate to undertake a term of service as interne in some good general hospital. About nine-tenths of the class of 1912 have received appointment by competitive examination or otherwise; and there are each year more demands for graduates of the school for such service than can be accommodated. There is no reason other than the circumstances of the individual why every man after graduation should not gain the experience advised as an interne in one or other hospital of the many advertising upon the bulletin boards of the school.

#### SOCIETY OF THE ALUMNI OF THE SCHOOL OF MEDICINE.

*President*.—Charles W. Burr, '86.

*Vice-Presidents*.—John B. Deaver, '78; Richard C. Norris, '87; John K. Mitchell, '83; George W. Guthrie, '73; William A. Edwards, '81; Park W. Willis, '91; Frank F. Simpson, '93.

*Historian*.—Roland G. Curtin, '66.

*Secretary and Treasurer*.—George M. Piersol, '05.

*Executive Committee* (for three years).—Herbert B. Carpenter, '89; J. H. W. Rhein, '90; John G. Clark, '91; Charles K. Mills, '69; G. G. Davis, '79; George A. Piersol, '77; Edward A. Shumway, '94.

*Executive Committee* (for two years).—Wm. J. Taylor, '82; B. Franklin Stahl, '87; Wm. Campbell Posey, '89; William Pepper, '97; S. McC. Hamill, '88; George W. Norris, '99.

*Executive Committee* (for one year).—James Tyson, '63; George E. deSchweinitz, '81; George C. Stout, '91; J. Gurney Taylor, '95; Charles H. Frazier, '92; Allen J. Smith, '86; Robert L. Pitfield, '92; Henry P. Brown, Jr., '12.

This Society was founded in 1870, and is composed of graduates of the School of Medicine in good standing.

The Society is actively engaged in collecting detailed information regarding the Medical Alumni, and is now preparing a matriculate catalogue which will contain the historical data thus acquired.

A special arrangement has been made with the General Alumni Society whereby *The Alumni Register* has become the official organ of this Society; and a joint annual subscription of \$3 will include membership in both Societies, and one year's subscription to *The Alumni Register*.

Subscriptions should be sent to the Treasurer of the General Alumni Society, 704 Hale Building.

**THE PHILADELPHIA ALUMNI SOCIETY OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.**

*President*.—H. B. Carpenter, '89.

*Honorary Vice-President*.—Provost Edgar F. Smith.

*Vice-Presidents*.—J. Guerney Taylor, '95; Howard A. Sutton, '98; John J. Robrecht, '94.

*Recording Secretary*.—Harvey E. Shock, '02.

*Corresponding Secretary*.—B. Franklin Stahl, '87.

*Treasurer*.—I. H. Jones, '06.

*Executive Committee*.—Clarence P. Franklin, '93; Daniel M. Hoyt, '91; George C. Stout, '91; George G. Ross, '91; W. S. Wray, '94; L. H. Adler, Jr., '88.

This Society was founded in the spring of 1892 among the alumni of the Medical Department of the University living in and near Philadelphia. The meetings are held on the third Saturday evenings of February, May and November, and are of a purely social character. The membership is composed of graduates of the School of Medicine. Those desiring to become members are requested to send their names to the Secretary. The dues are two dollars per annum.

## DEGREES AND PRIZES, 1912.

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At a public Commencement, held Wednesday, June 19, 1912, at the Metropolitan Opera House, the degree of Doctor of Medicine was conferred by Edgar F. Smith Ph.D., Sc. D., L.H.D., LL.D., Provost, upon the following candidates:

Name.	Post-Office.	State.
Albright, Markley Connel,	Hatfield,	Pennsylvania.
Alexander, John Harrison,	New Castle,	Pennsylvania.
Bagenstose, Harry William,	West Leesport,	Pennsylvania.
Bailey, Harry Francis,	Monongahela,	Pennsylvania.
Barnes, William Henry,	Philadelphia,	Pennsylvania.
Bedrossian, Edward Hagop	Marsovian,	Turkey.
Bell, Howard Homer,	Lewistown,	Pennsylvania.
Boles, Russell Sage,	Wynnewood,	Pennsylvania.
Brachman, David Simon,	Philadelphia,	Pennsylvania.
Bradner, Morris Renfrew,	Warwick,	New York.
Bromer, Ralph Shepherd,	Schwenksville,	Pennsylvania.
Brown, Henry Paul, Jr.,	Philadelphia,	Pennsylvania.
Bruce, James White,	Louisville,	Kentucky.
Cabrera, Esteban Garcia, Jr.,	San Juan,	Porto Rico.
Carley, Arthur Ward,	Ayer,	Massachusetts.
Collins, Arthur Aldridge,	Oxford,	Pennsylvania.
Cook, Thomas Wood,	Selma,	Ohio.
Darragh, Leon Calvin,	Reading,	Pennsylvania.
Denelsbeck, Julius Otis,	Trenton,	New Jersey.
Desjardins, Arthur Ulderic,	Waterville,	Maine.
Dickson, John McCrea,	Gettysburg,	Pennsylvania.
Diller, Isaac Slaymaker,	Lancaster,	Pennsylvania.
Diven, John,	Anderson,	Indiana.
Doe, Charles Herbert,	Philadelphia,	Pennsylvania.
Donlan, Francis Albert Bennett,	Shamokin,	Pennsylvania.
Downs, James Tickell, Jr.,	Dallas,	Texas.
Draper, Edgar Arthur,	Philadelphia,	Pennsylvania.
Dunn, Archibald Wallace,	Auburn,	Maine.
Edwards, Thomson Ford, Jr.,	Philadelphia,	Pennsylvania.
Evans, William Benedict,	Chester,	Pennsylvania.
Farrior, James William,	Kenansville,	North Carolina.
Fields, Sterling Otelius,	Newport News,	Virginia.
Fish, Ezra Simpson,	Los Angeles,	California.
Gilmore, James Lee,	Turtle Creek,	Pennsylvania.
Godfrey, Rush Clayton,	Lancaster,	Wisconsin.
Goldberg, Leo,	Philadelphia,	Pennsylvania.
Graves, Richard Alexander,	Presque Isle,	Maine.
Groh, John Lick,	Lebanon,	Pennsylvania.
Hanley, Paul Dawson,	Pottstown,	Pennsylvania.
Hanson, Edward Kelly,	Perth Amboy,	New Jersey.
Harmon, Herbert Thurlow,	Belfast,	Maine.
Hawk, David Jackson,	Tower City,	Pennsylvania.
Hirsch, Otto Christian,	Philadelphia,	Pennsylvania.

Name.	Post-Office.	State.
Hoover, Ernest Justin,	Altoona,	Pennsylvania.
Hopkinson, Richard Dale,	Philadelphia,	Pennsylvania.
How, Harold Waldron,	New York,	New York.
Howell, Gideon Lyman,	Trucksville,	Pennsylvania.
Jaspan, Samuel Clemens,	Philadelphia,	Pennsylvania.
Keeler, Russell R.,	Harleysville,	Pennsylvania.
Kerr, Harry James,	Homestead,	Pennsylvania.
Kessler, John Donovan,	Logan,	Ohio.
Ketterer, Clarence Henry,	Butler,	Pennsylvania.
Keyting, Walter Scott,	Salt Lake City,	Utah.
King, Clapham Price,	Annapolis,	Maryland.
King, Edward Ambrose,	Scottsdale,	Pennsylvania.
Klauder, Joseph Victor,	Philadelphia,	Pennsylvania.
Kleinhans, Paul Howard,	Easton,	Pennsylvania.
Kroh, Laird Franklin,	Rural Valley,	Pennsylvania.
Larned, Samuel Francis,	Syracuse,	New York.
Lewis, John Francis, Jr.,	Philadelphia,	Pennsylvania.
Lick, Maxwell John,	Albion,	Pennsylvania.
Llewellyn, Thomas Henry,	Paget, West,	Bermuda.
Loewenthal, Abraham Isador,	Philadelphia,	Pennsylvania.
Lowe, Eugene Clayton,	Key West,	Florida.
Lupin, Edward Emanuel,	Philadelphia,	Pennsylvania.
McCain, Gilpin Montieth,	Kittanning,	Pennsylvania.
McCord, Clinton Preston,	Elverson,	Pennsylvania.
McGinley, Joseph Leo,	Wilkes-Barre,	Pennsylvania.
McHenry, Robert Newcomb,	Millville,	New Jersey.
McNabb, Paul Edgar,	Knoxville,	Tennessee.
Magoffin, Montrose Bovard,	Mercer,	Pennsylvania.
Manzella, Joseph Anthony,	Brooklyn,	New York.
Markel, Ralph Montgomery,	Sunbury,	Pennsylvania.
Marks, Philip Edward,	Braddock,	Pennsylvania.
Marshall, Edward Humphrey,	Butler,	Pennsylvania.
Martin, Sergeant Price,	Chestnut Hill,	Pennsylvania.
Mayer, William Henry,	Pittsburgh,	Pennsylvania.
Monaghan, William Anthony,	Bristol,	Connecticut.
Moore, John Walker,	McConnellsburg,	South Carolina.
Murdock, Dennis Ray,	Waynesburg,	Pennsylvania.
Newcomet, Harry Isaac,	Reading,	Pennsylvania.
Newsom, Thomas C.	Independence,	Mississippi.
O'Boyle, Cyril Patrick,	Scranton,	Pennsylvania.
Pearl, Jacob,	Wissahickon,	Pennsylvania.
Peters, Charles Orley,	Albion,	Pennsylvania.
Pike, Charles Edward P.,	Philadelphia,	Pennsylvania.
Presper, Elmer John,	Philadelphia,	Pennsylvania.
Procter, Jewell Beauchamp,	Franklin,	Kentucky.
Reeves, Rufus Sargent,	Ardmore,	Pennsylvania.
Reymond, Robert Percy,	Baton Rouge,	Louisiana.
Rickert, Wilbur Paul,	Harrisburg,	Pennsylvania.
Rockwell, George Ward,	Akron,	Ohio.
Rosenbaum, Alex Morton,	Youngstown,	Ohio.

Name.	Post-Office.	State.
Rothrock, Arthur Crawford,	Reedsburg,	Pennsylvania.
Rothschild, Norman Stanley,	Philadelphia,	Pennsylvania.
Rubin, Harry,	Dunnellon,	Florida.
Russell, Leslie Crawford,	Saugerties,	New York.
Ruth, Aaron Leidy,	Conshohocken,	Pennsylvania.
Schaffner, Gerald Frederic,	Florence,	Italy.
Schildkraut, Jacob Max,	Trenton,	New Jersey.
Schmitz, Edgar Ferdinand,	St. Louis,	Missouri.
Schwartz, Philip Herman,	Hazleton,	Pennsylvania.
Segal, Louis,	Philadelphia,	Pennsylvania.
Shookers, Tobias Cletus,	Mountville,	Pennsylvania.
Simpson, John Christopher,	Philadelphia,	Pennsylvania.
Simpson, Sumner Clelland,	McKeesport,	Pennsylvania.
Sisney, Thomas La Vere,	Boyers,	Pennsylvania.
Smith, Daniel Arthur, Jr.,	Newport,	Rhode Island.
Smock, Irwin Bradfield,	Philadelphia,	Pennsylvania.
Stansfield, Oliver Holt,	Oxford,	Massachusetts.
Stevenson, William Wyckoff,	Trenton,	New Jersey.
Strode, George King,	West Chester,	Pennsylvania.
Sweeney, John Francis, Jr.,	Buffalo,	New York.
Thomas, Alfred Robert, Jr.,	Philadelphia,	Pennsylvania.
Thomas, David Wesley,	Weedville,	Pennsylvania.
Tidd, Charles Henry,	Effort,	Pennsylvania.
Toland, John Hart,	Philadelphia,	Pennsylvania.
Vance, Benjamin Morgan,	Louisville,	Kentucky.
Wahl, John Carl,	Scranton,	Pennsylvania.
Walker, Ralph Ward,	Butler,	Pennsylvania.
Walter, Max Johannes,	Philadelphia,	Pennsylvania.
Wells, James Ralston,	Philadelphia,	Pennsylvania.
Wolferth, Charles Christian,	Clarksboro,	New Jersey.
Zinsser, Harry Frederick,	Pittsburgh,	Pennsylvania.

December 13, 1912.

Pike, Charles Heyfield, Boston, Massachusetts, as of Class of 1912.

Of the foregoing there were from:

California .....	1	New Jersey .....	6
Connecticut .....	1	New York .....	6
Florida .....	2	Ohio .....	4
Indiana .....	1	Pennsylvania .....	78
Kentucky .....	3	Rhode Island .....	1
Louisiana .....	1	South Carolina .....	1
Maine .....	4	Tennessee .....	1
Massachusetts .....	3	Texas .....	1
Maryland .....	1	Utah .....	1
Mississippi .....	1	Virginia .....	1
Missouri .....	1	Wisconsin .....	1
North Carolina .....	1	Foreign .....	4
		Total .....	125

The following received the Dr. P. H. Degree:

Ayer, Ira, M.D.,  
Borden, John Thomas, M.D.,  
Edsall, Frank Hynard, M.D.,  
Smyth, Henry Field, M.D.

The Dr. H. P. Degree was retroactive for the following:

Johnston, John Anderson, M.D.,  
Lyster, William John LeHunte, M.D.,  
Wood, Harold Bacon, M.D.

For the C. S. Degree:

Parke, Samuel Reynolds, Jr.

#### PRIZES.

THE ALUMNI MEDAL awarded to the member of the Graduating Class who attains the highest general average in examination. To G. K. STRODE.

THE DR. SPENCER MORRIS PRIZE.—The annual income derived from the investment of Ten Thousand Dollars, awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine. To G. K. STRODE.

The Prize of an Obstetrical Forceps, offered by the Professor of Obstetrics, to the member of the Graduating Class who furnishes the best report of a case in Obstetrics occurring in the University Maternity Hospital. To E. H. BEDROSSIAN.

THE FREDERICK A. PACKARD PRIZE of One Hundred Dollars, offered by a friend of the University to the member of the Graduating Class who has proven himself to be the most proficient in the course in Clinical Medicine. To E. S. FISH.

## SCHOOL OF MEDICINE.

### POST-GRADUATE STUDENT.

Name.	Residence.	City Address.
Butt, William R., M.D. (Pennsylvania),	Philadelphia,	1701 Chestnut St.
Odin, Rudolph J. E., M.D., University Med. College (Kans., Mo.); A.B. (Bethany, Kans.),	Cadillac, Mich.,	3720 Locust St.

### FOURTH-YEAR CLASS.

Adams, Erick Archibald,	Wilkes-Barre,	3733 Spruce St.
Allis, Paul Mitten,	Wyalusing,	Dorm. 21 Rodney.
Armstrong, Thomas Morrell,	Philadelphia,	1429 Christian St.
Artman, Edward Louis, Jr.,	do.	1432 N. 17th St.
Bacharach, Daniel,	New York, N. Y.,	3323 Walnut St.
Bailey, Frank Raymond, B. S. (Westminster),	Xenia, Ohio,	3601 Locust St.
Ballou, DeForrest, Jr.,	Cynwyd,	3733 Spruce St.
Barnes, Frederick Rigby, Jr.,	Norristown,	[Norristown.]
Barrett, Martin Clement,	Kane,	Dorm. 420 McKean.
Bowman Foster H.,	Wilkes-Barre,	3743 Walnut St.
Bowman, Paul Newkirk,	Reading,	The Normandie.
Boyd, Samuel Harold, A.B. (Pennsylvania),	Hensel,	Dorm. 424 McKean.
Bramlett, William Parvin, B.S. (Mississippi),	Oxford, Miss.,	258 S. 38th St.
Bransfield, John William,	Portland, Conn.,	3733 Spruce St.
Burleigh, Charles Carroll,	Merchantville, N. J.,	[Merchantville, N. J.]
Burney, Thomas Morrison,	Los Angeles, Cal.,	Dorm. 16 Morgan.
Buschmann, Trygve Wedege,	Seattle, Wash.,	Dorm. 347 McKean.
Carpenter, James Stratton, Jr.,	Pottsville,	Dorm. 110 Franklin.
A.B. (Trinity),	Williamsport,	3703 Walnut St.
Carskadden, Henry Adam,	Newark, N. J.,	Dorm. 21 Wilson.
Ceres, Frederick,	Wilmington, Del.,	3703 Walnut St.
Chandler, Swithin,	Philadelphia,	5021 Walnut St.
Cohen, Herman Bernard,	Machias, Wash.,	3617 Locust St.
Cox, Ora Howard, B.S. (Whitman),	Wilmington, Del.,	3815 Spruce St.
Crossan, Edward Thomas,	Philadelphia,	1747 N. 33d St.
Dannenberg, Arthur Mansbach,	Warren,	2325 W. Thompson St.
Davidson, Douglas Treat, A.B. (Yale),	Goshen, N. C.,	Dorm. 440 Hopkinson.
Davis, James Wagner,	Red Creek, N. Y.,	2131 Fitzwater St.
Day, Elbert Osborne, A.B. (Hamilton),	Madison Wis.,	3905 Walnut St.
Dean, James Philip, B.S. (Wisconsin),	Smyrna, Del.,	S. E. Cor. 35th and Spring Garden Sts.
Denney, Oswald Evans,	Ashland,	4821 Brown St.
Dewey, Michael George,	Kutztown,	14 N. 36th St.
Dietrick, Paul Henry,	Narberth,	[Narberth.]
Dobbins, Royal Bolton,	Greenwich, N. Y.,	3733 Spruce St.
Doig, Rolland Barkley, B.S. (Pennsylvania),	Scranton,	do.
Donovan, Cornelius Charles, Jr.,	Edenton, N. C.,	Dorm. 14 Rodney.
Drane, Robert, A.B. (North Carolina),	S. Bethlehem,	126 S. 46th St.
Drinker, Cecil Kent, B.S. (Haverford),	(117)	

Name.	Residence.	City Address.
Dunn, William Thomas, B.S. (Pennsylvania State),	State College,	3703 Walnut St.
Ewing, Harvey Milligan, B.S. (Pennsylvania),	Montclair, N. J., Kane, Hazleton, Philadelphia, Du Bois, Philadelphia,	Dorm. 52 Provost Tower. 3922 Pine St. 3729 Spruce St. 4906 Lancaster Ave. 3705 Walnut St. 29 N. Farson St.
Fisher, Fred, Jr.,	Lebanon,	Dormitories.
Gaghan, Robert Aloysius,	New Providence,	3733 Spruce St.
Halprin, Abram,	Orange, Tex.,	3815 Spruce St.
Harrington, Stuart William,	Wilmington, Del.,	3400 Walnut St.
Harrison, Francis Grillet,	Wilkes-Barre,	3323 Walnut St.
Heilman, Adam George, Ph.B. (Franklin & Marshall),	Havana, Cuba,	Dorm. 11 Morgan.
Heim, John Daniel, A.B. (Franklin & Marshall),	Augusta, Wis.,	3743 Walnut St.
Hewson, John Percival	Coshocton, Ohio,	Dorm. 43 Coxe.
Hickman, Harry Chalmers,	Philadelphia, Reading,	2423 S. 20th St. Dorm. 409 Leidy.
Jacobosky, Cyrus,	Lewisburg,	Dorm. 307 Brooks.
Jacobsen, Rafael, B.S. and L. (Havana Institute),	Merchantville, N. J.,	3601 Locust St.
Johnson, Lloyd W., B.S. (Wisconsin),	Weatherly, Philadelphia, do. do.	3703 Walnut St. 1402 N. 16th St. 426 N. 41st St. 6 S. 38th St.
Johnston, James Renfrew, Jr., B.S. (Wooster),	Providence, R. I.,	Dorm. 360 Craig.
Kilduffe, Robert Anthony, 3d, A.B. (St. Joseph),	Milwaukee, Wis., Butler, Dante, Va.,	3905 Walnut St. 3743 Walnut St. 3733 Spruce St.
Lebkicher, Wellington Alfred,	Germantown, Monaca, Mendenhall,	[155 W. Walnut Lane.] 3743 Walnut St. 3610 Walnut St.
Leiser, William, 3d, A.B. (Bucknell),	Ercildoun, Lancaster, Norwich, N. Y., Homestead,	3601 Locust St. 3715 Walnut St. 3647 Woodland Ave. Dorm. 32 Bodine.
Lewis, Thomas Krapfel, B.S. (Haverford),	Rochester, N. Y., Sao Paulo, Brazil,	216 S. 43d St. 215 S. 33d St.
Long, William Samuel, A.B. (Ursinus),	New Castle,	3414 Race St.
Longaker, Edwin Pancoast,	Eugene, Ore.,	3743 Walnut St.
Lynch, Frank Bruce, Jr.,	Sterling, Kan., Corpus Christi, Tex., Philadelphia, Huntingdon,	3601 Locust St. 242 S. 44th St. 945 N. 5th St. Dorm. 114 Foerderer.
McCarthy, Cornelius Theodore,	Charlotte, N. C., Kingston, Mt. Carmel, El Paso, Tex.,	3601 Locust St. Dorm. 32 Bodine. 3703 Walnut St. do.
McEvoy, Frank Edward, B.S. (Pennsylvania),	Des Moines, Iowa,	257 So. 38th St.
McMahon, Francis Bartholomew, B.S. (Wisconsin),		
McNamee, Edgar Paul,		
McNeer, Thomas Theodore,		
Martin, Alexander Tertius, B.S. (Princeton),		
Mellon, George Walworth,		
Mercer, Eugene LeRoy,		
Moore, Lawrence Clayton, A.B. (Haverford),		
Mumma, Harry Getz,		
Nedurian, Vram Sarkis,		
Norris, Scott Allan,		
O'Brien, Leo Sullivan, A.B. (Rochester),		
Paiva, Benedicto Avila,		
Parsons, Percy Paul, A.B. (Allegheny),		
Prosser, William Oscar Hampton, A.B. (Oregon),		
Ramsey, Frank McCracken, B.S. (Haverford),		
Redmond, John Lawrence,		
Reimann, Stanley Philip,		
Reiners, Charles Robert,		
Robertson, James Farish, Jr., A.B. (Virginia),		
Rogers, Lewis Leonidas, Jr.,		
Samuel, Edmund Roger,		
Sauer, Paul Kurt,		
Sawyer, William Alfred, B.S. (Pennsylvania),		

Name.	Residence.	City Address.
Sheehan, William Coronado,	Chestnut Hill,	3601 Locust St.
Shivers, Charles Hendry de Turck,	Atlantic City, N. J.,	3718 Locust St.
Silvester, Willis Wilson, Jr.,	Norfolk, Va.,	Dorm. 14 Rodney.
Spahr, Richard Rockafellow,	Mechanicsburg,	3539 Locust St.
Sprowl, Raymond John, A.B. (Wabash College),	Warren, Ind.,	3601 Locust St.
Steenburg, Donald Benjamin, B.S. (Nebraska),	Aurora, Neb.,	Dorm. 24 Morris.
Steinfield, Edward,	Philadelphia, Kingston,	2231 N. 33d St.
Summa, Frank Paul,		Dorm. 16 Morgan.
Sweet, Ralph Lincoln, B.S. (Kansas Wesleyan),	Salina, Kan.,	3721 Locust St.
Taylor, Frederick Raymond, B.S. (Haverford),	Philadelphia, Hazleton,	Dorm. 115 Foerderer. Dorm. 21 Bodine.
Teufel, Walter Casper,		
Villalobos, Nilo, B.H. (Liceo de Heredia),	Heredia, Costa Rica,	3739 Locust St.
Vogt, David Mays, B.S. (Albright),	Prescott, Florence, N. J.,	The Normandie. Dorm. 34 Bishop White.
Weber, John Francis,	Chester Springs,	3703 Walnut St.
Wells, Frank Happerset, Ph.B. (Lafayette),	Rimersburg,	3405 Chestnut St.
Wiant, Meade, B.S. (Grove City),	Pueblo, Col.,	3442 Chestnut St.
Work, Philip, B.S. (Pennsylvania),	Wadesboro, N. C.,	3609 Locust St.
Wyatt, Wortham, A.B. (North Carolina),		

## THIRD-YEAR CLASS.

Adson, Alfred Washington, B.Sc. (Nebraska),	College View P. O., Lincoln, Nebraska,	3935 Pine St.
Allison, James Richard, A.B. (North Carolina),	Hendersonville, N. C., Jersey City, N. J.,	1737 N. 18th St. 3815 Spruce St.
Andreac, Paul Otto Mahr,		
Ashby, Edward Clayton, A.B. (Trinity College, N. C.),	Mt. Airy, N. C.,	3609 Locust St.
Bancroft, John Walter, Ph.B. (Franklin & Marshall),	Altoona,	Dorm. 446 Lippincott.
Belk, William Parks, A.B. (North Carolina),	Charlotte, N. C.,	3609 Locust St.
Belton, Joseph Franklin, B.S. (Wake Forest),	Mt. Airy, N. C., Carthagena, Colombia, S. A.,	3314 Walnut St. 3805 Spruce St.
Bennett (y Cordova), Raul, B.Ph. and L. (Univ. Bolivar),	Monpox, Colombia, S. A., Chester, Olean, N.Y.,	3440 Walnut St. 3442 Chestnut St. Dorm. 22 Rodney.
Bolivar, Luis Napoleon, B.Ph. and L. (Univ. Bolivar),		
Broomall, Harold Shoemaker,	Swedesboro, N. J., Philadelphia,	Dorm. 434 Class '87. 1541 S. Broad St.
Bump, Merton J.,	Northfield, Minn.,	2601 Lombard St.
Buzby, Benjamin Franklin, A.B. (Pennsylvania),	Elkins Park, Atlantic City, N. J., Erie,	3537 Locust St. 3710 Spruce St. Dorm. 27 Thomas Penn.
Campbell, Stephen,		
Chaney, Ralph Hill, A.B. (Oberlin),	Philadelphia,	Dorm. 306 Brooks.
Cole, Charles James, Jr., B.A. (Pennsylvania),	Johnstown,	3641 Locust St.
Conover, John Roy,	University, Miss.,	258 S. 38th St.
Dennis, Edward Parker,		
Donnelly, John Devlin, A.B. (La Salle),	Milwaukee, Wis.,	Dorm. 205 Leidy.
Entwistle, Robert Morgan, B.S. (Princeton),		
Farley, David La Bauve, B.S. (Mississippi),		
Foerster, Harry Robert, B.S. (Wisconsin),		

Name.	Residence.	City Address.
Foncannon, Frank, A.B. (Kansas),	Emporia, Kan.,	Dorm. 23 Morgan.
Frank, Louis Wallace, A.B. (Center College, Danville, Ky.)	Louisville, Ky.,	Dorm. 316 Leidy.
Fussell, George Dock, B.A. (Swarthmore),	Roxborough, Philadelphia,	[421 Lyceum Ave.] 4544 N. 18th St.
Galey, Harry Charles, Jr.,	Oakland, La.,	3815 Spruce St.
Green, Henry Larkin, B.S. (Louisiana),	Chippewa Falls, Wis.,	Dorm. 205 Leidy.
Hanson, Otto Ludwig, B.S. (Wisconsin),	Wheeling, W. Va.,	Dorm. 49 Morgan.
Hupp, John Cox,	Philadelphia,	714 Dickinson St.
Immerman, Samuel Leon, Jalbuena (y Benedicto), Jose, A.B. (Ateneo de Manila),	Jaro, Iloilo, P. I.,	7104 Woodland Ave.
Keller, Joseph Charles, B.A. (St. Mary, Belmont, N. C.),	Philadelphia,	[1352 Wagner Ave., Logan.]
Kern, Richard Arminius, A.B. (Pennsylvania),	Taborton, N. Y.,	3733 Spruce St.
Kibler, William Herbert, A.B. (North Carolina),	Morganton, N. C.,	3222 Chestnut St.
Kleckner, Martin Seler, B.S. (Muhlenberg),	Allentown, Scranton,	Dorm. 240 Hopkinson. 3449 Woodland Ave.
Kraemer, Harry Michael, Krug, Bernard McDowell, A.B. (Washington & Lee),	Sao Paulo, Brazil, Philadelphia, do.	3601 Locust St. 1428 N. Broad St. 3745 Spruce St.
Leopold, Simon Stein, Levering, James Walter, Logue, James Gibson, Loughridge, Jonathan Edwards, A.B. (Williams),	Williamsport,	Dorm. 11 Rodney.
McCullough, Clarence Joseph, McNett, James Santee, Masonheimer, Willard Charles, A.B. (Lafayette),	Peoria, Ill., Pittsburgh, Hornell, N. Y.,	Hamilton Court. 3703 Walnut St. 3609 Walnut St.
Mattson, William W., Millikin, Harry William, B.S. (Waynesburg),	Weatherly, Seattle, Wash.,	3703 Walnut St. 3710 Spruce St.
Milnor, Guy Champion, B.S. (Albright),	Waynesburg,	Dorm. 435 Baird.
Nafey, Herbert William, B.S. (Rutgers),	Warrensville,	Dorm. 35 Birthday.
Pacheco (y Chaverri), Oscar, B.S. and A. (Liceo de Heredia),	New Brunswick, N. J.,	Dorm. 348 McKean.
Peden, James Clark, B.S. (Davidson),	Heredia, Costa Rica,	3739 Locust St.
Rubin, Robert William, Rutherford, Frank Allen, A.B. (Lebanon Valley),	Fountain Inn, S. C., Philadelphia,	3703 Walnut St. 2243 S. 9th St.
Schafer, Charles Solomon, Schumm, Herman Charles, B.S. (Pennsylvania),	Royalton, Philadelphia,	223 S. 33d St. 2222 Ridge Ave.
Scruggs, William Marvin, B.S. (Wake Forest),	Fort Hamilton, N. Y.,	Dorm. 312 Leidy.
Shields, George Patrick, Silman, Charles Norman, B.S. (Bucknell),	Caroleen, N. C., Oil City,	3314 Walnut St. 3703 Walnut St.
Simons, Isaac Shirk, A.B. (Franklin and Marshall),	St. Mary's,	Dorm. 48 Rodney.
Sloan, David Bryan, A.B. (North Carolina),	Marietta,	Dorm. 435 Baird.
Smith, Gibson, A.B. (Pennsylvania),	Ingold, N. C.,	3609 Locust St.
South, John Joseph, Spangler, John Luther, B.S. (Pennsylvania),	Philadelphia, Bridgeport, Ohio,	3641 Locust St. Dorm. 30 Thomas Penn.
Stewart, Joseph Edgar,	York, Webb City, Mo.,	3733 Spruce St. 3618 Chestnut St.

Name.	Residence.	City Address.
Sturgis, Samuel Booth, Szlapka, Thaddeus Louis, B.S. (Pennsylvania),	Roxborough,	[488 Green Lane.]
Taylor, James Swan, A.B. (Princeton),	Sheeder,	3733 Spruce St.
Tebbetts, Herbert Edwin, B.S. (Earlham),	Altoona,	242 S. 44th St.
Thompson, Hugh Alexander, A.B. (North Carolina),	Richmond, Ind.,	Dorm. 314 Leidy.
Turlington, Lee Franklin, A.B. (North Carolina),	Raleigh, N. C.,	3601 Locust St.
Tyree, James I., A.B. (Missouri),	Mt. Airy, N. C.,	3609 Locust St.
Underhill, Eugene, Jr., A.B. (Swarthmore),	Webb City, Mo.,	3618 Chestnut St.
Walker, Robert Carroll, B.S. (Davidson),	Swarthmore,	[Swarthmore.]
Wallace, Helen Ketcham, A.B. (Missouri),	Waycross, Ga.,	3409 Walnut St.
Ward, Hugh David, B.S. (Wake Forest),	St. Joseph, Mo.,	3618 Chestnut St.
Wilkerson, Thaddeus Earl, B.S. (North Carolina),	Southport, N. C.,	3314 Walnut St.
Willson, Harry Leigh, B.S. (Whitman),	Roxboro, N. C.,	3611 Locust St.
Winkelman, Nathaniel,	Idaho Falls, Idaho, Philadelphia,	3601 Locust St. Dorm. 13 Morgan.

## SECOND-YEAR CLASS.

Alexander, Horace Edward, Bates, William, B.S. (Pennsylvania),	Murfreesboro, Tenn.,	217 De Kalb Sq.
Bergstein, Alfred Morton, Bodley, James Wiley, B.S. (Pennsylvania),	Philadelphia, Pottsville,	3601 Locust St. 27 S. 34th St.
Buchanan, James Arthur, Buzzard, Josiah Floyd, Callis, Henry Arthur, A.B. (Cornell),	Staunton, Va., Stricklersville, Stroudsburg,	3603 Locust St. Dorm. 315 Leidy. 3409 Walnut St.
Callomon, Verner Bickart, Clemens, Edward Lamar, A.B. (Maryville),	Chicago, Ill., Pittsburgh,	103 S. 34th St. 2414 N. Broad St.
Dambrauckas, Adam, A.B. (Valparaiso),	Caldwell, Idaho,	Dorm. 41 Provost Tower.
Dibble, John, Dike, Benjamin Harrison, Ellis, James William, Ernest, Richard Bilderback, Jr.,	Frankford, Camden, N. J., York, N. Y., Cheyenne, Wyoming, Salem, N. J., Clarion, Scranton,	3314 Walnut St. [559 Washington St.] 3409 Walnut St. Dorm. 36 Thomas Penn. 23 N. 54th St. 4437 Chestnut St. Dorm. 133 Baird.
Fitzgerald, Charles Arnold, Goldsmith, Nathan Ralph, Goodwin, Andrew Jackson, Gore, Thomas Lee, Green, David Wright, Hamilton, Arthur Beck, B.A. (Moravian),	Wheeling, W. Va., Wilmington, N. C., Salem, N. J.,	268 S. 38th St. 3815 Spruce St. 3703 Walnut St.
Higgs, Charles, Jr., Hitchcock, Francis Bennett, B.S. (Pennsylvania),	Herrnhut, Saxony, Germany, Wilkes-Barre,	3703 Powelton Ave. 4 S. 43d St.
Hoge, Solomon F., A.B. (Waynesburg),	Philadelphia,	4511 Locust St.
Kelly, George Francis Joseph, Kistler, Robert Harrison, B.S. (Princeton),	Waynesburg, Philadelphia,	3815 Spruce St. 1234 Montrose St.
Klotz, Jeremiah Alexander, A.B. (Lafayette),	Lansford,	3703 Walnut St.
Kuhlman, Ernest George, B.S. (Pittsburgh),	Northampton,	3703 Walnut St.
	Mt. Lebanon,	3815 Spruce St.

Name.	Residence.	City Address.
Lane, Franklin Fayette, B.S. (Pennsylvania),	Philadelphia,	3621 Locust St.
Little, Frederick Bryton, B.S. (Bucknell),	Uniontown, York,	Dorm. 502 Baldwin. Dorm. 322 Leidy.
Long, W. Newton,	Norfolk, Neb.,	3601 Locust St.
Luikart, Ralph Herbert,		
McCaw, William Walker, B.S. (Gettysburg),	McKeesport,	3717 Locust St.
McCouch, Grayson Prevost, A.B. (Harvard),	Chestnut Hill,	[St. Martin's Lane.]
McDuffie, James Henry, Jr., A.B. (Davidson),	Columbus, Ga., Aurora, Neb.,	3708 Walnut St. 3601 Locust St.
McKee, Clarence Stiles,		
Maerker, Karl Roland, B.S. (Dartmouth),	Napoleon, Ohio,	Dorm. 434 Class '87.
Marshall, John Edward, A.B. (Lebanon Valley),	Annville,	3815 Spruce St.
Medrano, Joachim Higinius, B.S. and L. (Instituto de Oriente, Cuba),	Guantanamo, Cuba,	3314 Walnut St.
Miller, Richard Jonathan, B.S. (Gettysburg),	Harrisburg, Narberth,	3717 Locust St. [118 N. 6th St.]
Narrigan, Clifford Young,		
Nichols, Eli, B.S. (Haverford),	Wilmington, Del., Norwood, New Kensington,	[1607 Mt. Salem Lane.] [Norwood.] 124 S. 34th St.
Packer, Jesse E.,		
Passolano, Frank John,	West Chester, Philadelphia,	3641 Locust St. 3112 N. Broad St.
Patrick, Jesse Kersey, A.B. (Haverford),	do.	3537 Locust St.
Paul, John Davis,	Walden, N. Y.,	Dorm. 54 Provost Tower.
Perrott, Edwin William, Jr., B.S. (Pennsylvania),	Seattle, Wash.,	3601 Locust St.
Peters, Theodore, B.S. (Hamilton),	Sandersville, Ga.,	3706 Walnut St.
Plum, Frank Arents, A.B. (Washington),	New Bedford, Mass.,	258 S. 38th St.
Rawlings, Fred Bangs, B.S. (Emory),	Pittsburgh,	Dorm. 317 Leidy.
Robbins, Elmer Ellsworth, Jr., A.B. (Harvard),	Dublin,	647 S. Conestoga St.
Schlegel, Alvin Andrew, B.S. (Pennsylvania),	Stroudsburg,	Dorm. 501 Baldwin.
Shearer, Herbert Benjamin, B.S. (Pennsylvania),	Philadelphia, Mondovi, Wis., Philadelphia,	1423 Walnut St. 3810 Locust St. 3326 Walnut St.
Smith, Stanton Reinhart, B.S. (Bucknell),	do.	728 Rising Sun Ave.
Staub, Samuel John, B.S. (University of Pacific),	Battle Creek, Mich.,	3815 Spruce St.
Whelan, Paul,		
Wilson, Edwin Barrett,		
Withrow, Albert William, B.S. (Pennsylvania),		
Woodard, George Sawyer, A.B. (Oberlin),		

**FIRST-YEAR CLASS.**

Adams, David Hayes Agnew,	Paoli,	[Paoli.]
Albaugh, Esten Forrest, B.S. (Ohio Northern University),	Tarpon Springs, Fla., Philadelphia,	Dorm. 429 Class '87. Dorm. 350 Baldwin.
Alexander, John,		
Allen, Kenneth Dayton Allison, A.B. (Denver),	University Park, Colo., St. Paul, Neb.,	258 S. 38th St. 3935 Pine St.
Andrews, Clayton Farrington,		
Archer, John George, Jr., B.S. (Vanderbilt),	Greenville, Miss.,	217 DeKalb Sq.
Arnett, John Hancock, A.B. (Princeton),	Philadelphia,	2116 Pine St.

Name.	Residence.	City Address.
Baird, Joseph Shannon, A.B. (Emporia),	Edgerton, Kan.,	Dorm. 14 Morgan.
Best, Paul Wesley, A.B. (Trinity College, North Carolina),	Goldsboro, N. C.,	3611 Locust St.
Bloomhardt, Samuel Isett, A.B. (Pennsylvania College, Gettysburg),	Altoona,	3717 Locust St.
Bucher, Carl Joseph, B.S. (Pennsylvania),	Logansport, Ind.,	3815 Spruce St.
Bussinger, Marshall Robert,	Philadelphia,	1623 N. 16th St.
Carpenter, Chapin, A.B. (Trinity College, Hartford, Conn.),	Pottsville,	Dorm. 110 Franklin.
Cook, Philip Lewis, A.B. (Lafayette),	Wyalusing, Scranton,	14 No. 36th St. 3733 Spruce St.
Donovan, William Murray, Earhart, Samuel Darragh, A.B. (Washington),	Medford, Ore., Philadelphia, Lima, Wayne,	3743 Walnut St. 2041 Green St. 4007 Chestnut St. [Wayne.]
Ely, William Cromwell, Evans, Francis Edgerton, Fallon, Louis Fleming, Farquhar, Howard Lester, B.S. (Bucknell),	West Brownsville, Philadelphia,	3413 Walnut St. 5305 Rising Sun Ave.
Felton, William Scott, Forman, Douglas Newton, A.B. (Wooster),	Kasur, India, Sunbury, Philadelphia,	Dorm. 44 Coxe. 1306 Morris St. 724 Salter St.
Francis, Raymond Toot, Giordano, Anthony Angelo, Greene, Cyrus Theodore, A.B. (Lincoln),	do.	103 S. 34th St.
Greenwell, Albert Wright, B.S. (Whitman),	Idaho Falls, Idaho,	3617 Locust St.
Hays, William Linn, Ph.B. (Dickinson),	Landisburg, Bentleyville, Philadelphia,	3308 Woodland Ave. 221 S. 36th St. 43d and Chester Ave.
Hetherington, Ray Russell, Hinton, Drury, Hobbs, Louis Lyndon, Jr., A.B. (Guilford University, North Carolina),	Guilford College, N. C.,	[Haverford.]
Hoebeke, William George, A.B. (Hope),	Grand Rapids, Mich.,	3609 Locust St.
Hufford, Henry Kurtz Baumgardner, B.S. (Pennsylvania College, Gettysburg),	Reading,	307 S. 39th St.
Jena, Milton, B.S. (Pittsburgh),	Pittsburgh,	Dorm. 21 Provost Tower
Kincius, Joseph J., A.B. (Valparaiso),	Wilkes-Barre, Germantown,	3814 Spruce St. 214 S. 37th St.
Kohlmam, Samuel Hill, Kreutzmann, Henry Adolph Robert,	San Francisco, Cal., Lebanon, Charlotte, N. C.,	Dorm. 41 Birthday. 3721 Spruce St. 217 DeKalb Sq.
Leopold, Jay Bashore, Long, Wallace Locksley, MacKinnon, Goff, B.S. (Washington),	Seattle, Wash.,	3737 Locust St.
McBrayer, Reuben Adolphus, B.A. (Wake Forest),	Asheville, N. C.,	3601 Locust St.
McCUTCHEON, Morton, A.B. (Pennsylvania),	Germantown,	Dorm. 350 Baldwin.
Magoun, James Albert Hughes, Jr., A.B. (Princeton),	Newark, N. J., New York, N. Y., Mobile, Ala., Philadelphia,	Dorm. 399 N. Y. Alumni. 3805 Spruce St. 3713 Walnut St. 4313 Sansom St.
Mason, Frederick Raoul, Mastin, Edward Vernon Metcalfe, Murphy, Douglas Power, North, Charles Quay, B.S. (Washington),	do.	3743 Walnut St.

Name.	Residence.	City Address.
Patrie, Harry Hapeman,	Red Hook, N. Y.,	300 S. 36th St.
Pavy, Albert Berchmans,		3815 Spruce St.
B.S. (Louisiana State University),	Opelousas, La.,	Dorm. 406 Brooks.
Perkins, John Douglas, Jr.,	Coatesville,	Dorm. 418 Franklin.
Perkins, Joseph Ashbridge,	do.	3405 Chestnut St.
Phillips, Arthur William,	Emlenton,	
Propst, Walter William,		14 N. 36th St.
Ph.B. (Lafayette),	Archibald,	300 S. 36th St.
Pyle, Louis Apgar,	Jersey City, N. J.,	
Reynolds, David Duer,		3803 Spruce St.
A.B. (Haverford),	Kennett Square,	223 S. 37th St.
Rice, Walter Douglas,	Easton,	221 S. 36th St.
Scott, Roy Lorraine,	Fairchance,	Dorm. 354 Class '87.
Seabold, Paul Seibert,	Lebanon,	25 S. Van Pelt St.
Secord, Walter Newton,	Newton, Mass.,	
Sharpe, Frank Alexander,		3703 Walnut St.
B.S. (Davidson),	Greensboro, N. C.,	[Ogontz]
Shoemaker, Robert, 3d,	Ogontz,	2403 E. York St.
Sommers, Raymond Lock,	Philadelphia,	
Spencer, Robert Douglas,		Dorm. 20 E. F. Smith.
B.S. (Pennsylvania State),	Williamsport,	3637 Locust St.
Stroud, William Daniel,	Philadelphia,	
Tweddel, George Kay,	do.	745 S. 60th St.
A.B. (Princeton),	Philadelphia,	928 Christian St.
Vadala, Anthony Joseph,		
Vale, Claire Fremont,		2601 Lombard St.
A.B. (Washington and Tusculum),	Lambertville, N. J.,	Dorm. 48 Thomas Penn.
Van Winkle, John Shaw,	Paterson, N. J.,	6410 Germantown Ave.
Waltz, Arthur David,		
Sc.B. (Bucknell),	Hepburnville,	
Werner, Frank Pattison,		Dorm. 36 Birthday.
Ph.B. (Franklin and Marshall),	Orwigsburg,	3711 Woodland Ave.
Yoho, Charles Elmer,	Elwood City,	
Zacks, Myron Albert,	Erie,	Dorm. 20 Mask and Wig.

**SPECIAL STUDENTS.**

Doke, William H.,	Chester,	Crozer Theological Seminary, Chester.
Sangree, H. K.,		
A.B. (Lafayette),	Philadelphia,	108 S. 42nd St.
Varian, M. G.,		
M.D. (Pennsylvania),	Shasta, Cal.,	Wilmot Hotel.
Edson, Ray A.,		
M.D. (Buffalo),	Philadelphia,	1421 Arch St.

**COURSES IN PUBLIC HEALTH.**

Blakeslee, Walter Herbert,	Philadelphia,	3328 N. 17th St.
A.B., A.M. (Amherst),		
M.D. (Johns Hopkins) 1901,	Philadelphia,	918 S. St. Bernard St.
Kolmer, John Albert,		
M.D. (Pennsylvania) 1908,	Slatington,	3733 Walnut St.
Mack, Charles Beaver,		
M.D. (Jefferson College) 1910,	Philadelphia,	252 N. 12th St.
Stewart, Alonzo Hamilton,		
M.D. (Jefferson College) 1892,	St. Luke's Hospital,	3609 Locust St.
Tyau, Edward Sinded,	Shanghai, China,	
M.D. (St. John's University,		
Shanghai) 1908,	Philadelphia,	1808 Diamond St.
White, Courtland Yardley, Jr.,		
M.D. (Pennsylvania) 1895,	Loh's Garden W. Gate,	3609 Locust St.
Yui, C. Voonping,	Shanghai, China,	
M.D. (St. John's University,		
Shanghai) 1908,		

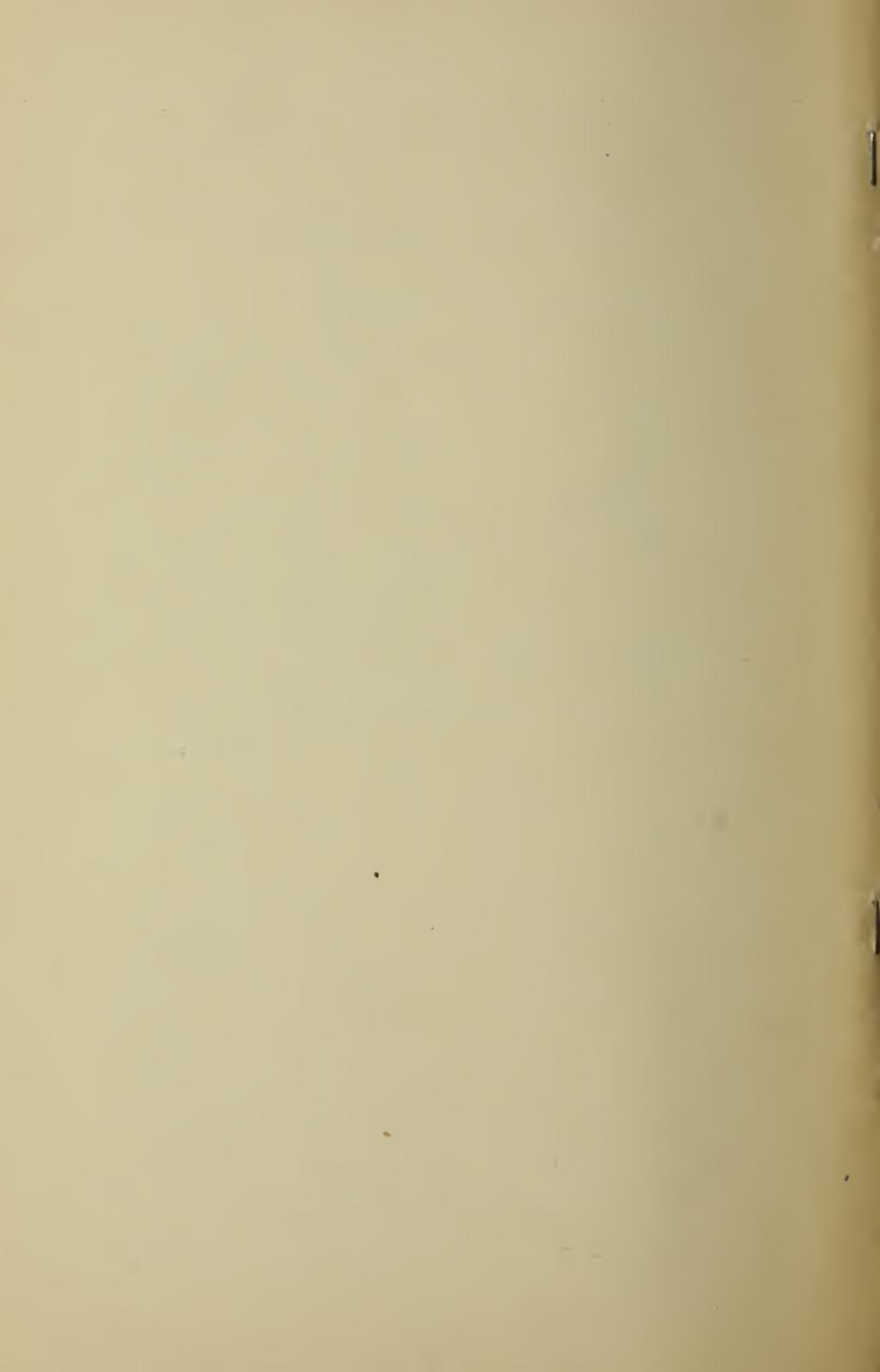
## SUMMARY.

Post-Graduate Student .....	2
Student of the Fourth-year Class .....	102
Students of the Third-year Class .....	76
Students of the Second-year Class .....	58
Students of the First-year Class .....	71
* Special Students .....	11
Total .....	320

\*Four Special Students and seven in Public Health.







## MEDICAL CALENDAR FOR 1913-1914.

### 1913.

June 19, Thursday ..... \*Registration of Candidates for Admission: 9 A. M.  
June 19, Thursday ..... Entrance Examinations: 9 A. M.  
Sept. 18, Thursday ..... \*Registration of Candidates for Admission: 9 A. M. to 11 A. M.  
Sept. 18, Thursday ..... Entrance Examinations begin: 9 A. M.  
Sept. 22, Monday ..... Competitive Examinations for Medical Scholarships begin: 10 A. M.  
Sept. 22, Monday ..... Examination for Admission to Advanced Standing begins: 2 P. M.  
Sept. 22, Monday ..... Re-Examinations begin: 2 P. M.  
Sept. 26, Friday ..... Session begins.  
Nov. 26, Wednesday ..... Thanksgiving Recess begins: 6 P. M.  
Dec. 1, Monday ..... Thanksgiving Recess ends: 9 A. M.  
Dec. 20, Saturday ..... Christmas Recess begins: 6 P. M.

### 1914.

Jan. 5, Monday ..... Christmas Recess ends: 9 A. M.  
Jan. 26, Monday ..... Mid-Year Examinations begin: 9 A. M.  
Feb. 23, Monday ..... University Day: Recess.  
April 9, Thursday ..... Easter Recess begins: 6 P. M.  
April 14, Tuesday ..... Easter Recess ends: 9 A. M.  
May 4, Monday ..... Last day for receipt of Prize Essays and Reports.  
May 25, Monday ..... Final Examinations, Fourth-Year Class, begin.  
June 1, Monday ..... Final Examinations, other Classes, begin.  
June 17, Wednesday ..... Commencement: 11 A. M.

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\*Registration of candidates for admission by examination only. Registration and Examination conducted in College Hall.

UNIVERSITY OF ILLINOIS-URBANA



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